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ABSTRACT

Primary objectives of a national study were to quantify resource utilization patterns of vocational education programs effectively serving special needs populations and to develop a methodology for estimating resources required to successfully serve these populations. Emphasis was placed on the disadvantaged, as defined in P.L. 90-576. Surveyed programs were selected from nominations by State consultants with responsibility for special needs programs, State advisory councils, and other selected sources. Ninety-eight program administrators (62% of the sample) completed a survey questionnaire designed to accept all measurable program resources. Seventy-eight program elements were classified into eight program components. (Resource use patterns are documented in tabular form to facilitate program planning, budgeting, and review at all levels.) A seven-step procedure, utilizing data provided by participating program administrators was developed. (Estimates of needs are provided at national and State levels and for four types of program environments.) Findings suggested that (1) while difficult, successful vocational education for the disadvantaged is being demonstrated, (2) significant numbers of eligible students are not served, (3) the 15% set-aside funds are inadequate--12-20 times more could be expended effectively. This volume, one of a three-volume report on the national study, contains five chapters: Introduction; Literature Review, Issue Oriented Seminars, and State Plans Analysis; Methodology and Procedures; Results; and Conclusions. Appendixes include summaries of two issue oriented seminars, sample correspondence, the master program list (coding system and system explanations), and the program administrator questionnaire. (HD)

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Final Report

Project No. V0135VZ
Contract No. OEC-0-74-1754

ASSESSMENT OF NEED IN PROGRAMS OF VOCATIONAL EDUCATION FOR THE DISADVANTAGED AND HANDICAPPED

Volume I
Technical Report

Edgar A. Parsons
James H. Hughes and Eric Rice

System Sciences, Inc.
P. O. Box 2345
Chapel Hill, N. C. 27514

December 25, 1975

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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AUTHOR'S ABSTRACT

Primary objectives of this national study were to quantify resource utilization patterns of vocational education programs effectively serving special needs populations and to develop a methodology for estimating resources required to successfully serve these populations.

Emphasis was placed on the disadvantaged, as defined in P.L. 90-576.

Surveyed programs were selected from nominations by State consultants with responsibility for special needs programs, State Advisory Councils, and other selected sources. Ninety-eight program administrators (62% of the sample) completed a survey questionnaire designed to accept all measurable program resources. Seventy-eight program elements were classified into eight program components. Resource use patterns are documented in tabular form to facilitate program planning, budgeting, and review at all levels.

A seven-step procedure, utilizing data provided by participating program administrators was developed. Estimates of need are provided at national and state levels and for four types of program environments.

Findings suggested that: (1) while difficult, successful vocational education for the disadvantaged is being demonstrated; (2) significant numbers of eligible students are not served; (3) the 15% "set-aside" funds are inadequate--12-20 times more could be expended effectively.

The three-volume report includes an annotated bibliography with over 100 entries, and a compendium of descriptions of 55 programs.

FOREWARD

Specifications for this project originated in the Fiscal Year 1974 Research Program of the Office of Education in the specific form of the Part C Vocational Education Research Program. The project manager on behalf of the government was Mr. Mario George, Research Projects Branch, Division of Research and Demonstration, Bureau of Occupational and Adult Education.

The work was performed by Dr. Edgar A. Parsons, Mr. James H. Hughes, Mr. Eric Rice, Ms. Rose Etheridge and Mr. John Poe in the North Carolina office of System Sciences, Inc.

Grateful acknowledgement is made for the cooperation and suggestions from the many vocational educators and administrators at local, State, and federal levels who provided valuable insight into the practical and theoretical problems of achieving the objectives of P.L. 90-576, the Vocational Education Amendments of 1968.

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The comments and assistance of Dr. Joseph Clary and Dr. Walter M. Arnold are gratefully acknowledged as are the contributions and efforts of other persons who participated in seminars and other activities conducted during the course of this research project.

The personnel of the Research Branch, Division of Research and Demonstration, Bureau of Occupational and Adult Education, U.S. Office of Education, are acknowledged for great assistance. The efforts of Ms. Barbara Kemp, Program Specialist for Disadvantaged in the State Programs and Services Branch are especially appreciated. Additionally, we acknowledge the assistance provided by the advisory committee members including Mr. Mario George, Ms. Velma Brawner, Dr. Bettina Weary, Dr. Mel Appell, Mr. Sherrill McMillen, and Mr. Howard Matthews.

Finally, the authors would like to express special thanks to Mr. Mario George, Project Officer, for his patience, timely comments, and support during the course of the research project.

EAP December 1975
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I. INTRODUCTION

INTRODUCTION AND STATEMENT OF NEED

The research project, "Assessment of Need in Programs of Vocational Education for the Disadvantaged and Handicapped," was designed to provide practical recommendations which could impact directly on patterns of resource utilization and quantification of additional resource needs in programs of vocational education for disadvantaged and handicapped students.

The research study, as part of the Vocational Education FY74 Research Program, is responsive to the Office of Education's research priority area of Disadvantaged, Handicapped, and Minority:

> Information is needed to improve vocational education and vocational education opportunities for disadvantaged, handicapped, and minority populations. Applied studies will be supported to produce information that is designed for use by decision makers at the federal, State, and local levels. These studies should produce information which will: (1) improve the utilization of existing vocational education resources for target populations, (2) improve the image of vocational education for target populations, and (3) provide a basis for improving access to the field or fields of employment for which individuals in a target group or groups have been trained. 1/

Emphasis has been placed on providing information designed for use by decision makers at federal, State, and local levels to improve the utilization of existing vocational education resources for the target population of vocational education disadvantaged students at the secondary level. The decision to place emphasis on this special needs population was made early in the project period in consultation with the OE Project Officer and the Project Advisory Committee. Concurrent studies emphasize the handicapped student population, and the expressed need for increased priority on research efforts in the area of disadvantaged were the primary considerations in choosing this direction for the project.

Vocational education disadvantaged and handicapped students are unusual target populations because they are limited only by the criterion

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1/ DHEW, Office of Education. Research Projects in Vocational Education. Federal Register, 38, 233, Part III, p. 33566.

of not succeeding in a regular vocational education course. This failure to succeed qualifies a student for special assistance. The uniqueness of the requirement of the statute, to provide opportunities for students who are not succeeding in regular vocational education, has proven difficult to communicate and administer for vocational educators at all levels. For example, the October 1972 report of the Comptroller General of the U.S. discussed at length the need for administrative improvements aimed at correcting the situation.[2] The report was reproduced in the two volume November 1973 compilation prepared by the House of Representatives General Subcommittee on Education with related commentary from States and State advisory councils. Included in the report was a detailed explanation of the words disadvantaged and handicapped in the vocational education context. These words are legally and administratively distinct from all other Office of Education and/or other governmental programs using such descriptors. Yet, the use of identical terms in describing different programs has facilitated confusion and misunderstanding of Congressional intent by local and State practitioners. For example, the Government Accounting Office report, Training America's Labor Force: Potential, Progress and Problems of Vocational Education, contained the following conclusions:

> Some state and local education officials did not fully understand the intended use for funds for disadvantaged persons and therefore used the funds for regular vocational education programs.
>
> As a result of discussions with GAO HEW issued clarifying guidelines and planned to hold regional conferences to provide further clarifications.
>
> These actions should provide the needed clarification but to be effective the guidelines will have to be enforced through increased HEW and state program monitoring.[3]

The GAO Report included a concentrated analysis on vocational education for disadvantaged and handicapped students pointing out the problems of program effectiveness, accountability, reporting requirements, and unserved students. The report included the following recommendation with which the Secretary of HEW concurred:

---

[2] Training America's Labor Force: Potential, Progress and Problems of Vocational Education, Report to the Congress by the Comptroller General of the United States. Washington, D.C.: U.S. Government Accounting Office, October 18, 1972, p. 2.

[3] Ibid., p. 2.

> Instruct HEW regional offices to monitor more closely the use of funds for educationally disadvantaged persons to insure that these funds are being used as intended by the Act in compliance with HEW guidelines.
>
> Require the states to describe procedures they intend to employ so that funds for the disadvantaged are used properly.[4/]

The end products of the "Assessment of Need in Programs of Vocational Education for the Disadvantaged and Handicapped" are intended to assist the Department of Health, Education and Welfare in responding to such commentary and to impact directly on program planning needs by addressing:

1. Identification/documentation of the more effective vocational education disadvantaged programs and operations in the U.S. at the secondary level;
2. Quantification of resource requirements of the more effective programs, thereby assisting the regional and State offices of education to recognize and justify effective expenditure of funds; and
3. Provision of some basis for estimating the total resource requirements necessary for the achievement of the purposes of P.L. 90-576 on behalf of the vocational education disadvantaged population.

RESEARCH GOALS

System Sciences, Inc. translated these three needs into three broad based research aims for the project. These three aims were stated as follows:

1. Analyze the more effective programs helping the designated target population to succeed in vocational education;
2. Estimate needs for current programs to achieve demonstrated effectiveness levels (eliminate dropouts and expected failures, enroll those wishing to be served);
3. Analyze findings in terms of selected administrative and budgetary implications for vocational education programs that deal with the selected target population. More specifically,

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[4/] Ibid., p. 3.

to make the initial developments of a methodology that would enable vocational educators to evaluate the magnitude of the task of adequately serving vocational education disadvantaged students.

RESEARCH OBJECTIVES

In undertaking to meet these three broad goals, System Sciences, Inc. developed a series of specific task objectives which functioned as the necessary combination of steps for achieving the aforementioned broad goals. Specifically, the research was designed to accomplish the following objectives:

1. Quantify the professional, paraprofessional, and other personnel, equipment, supplies, and other resources employed or consumed in vocational education disadvantaged programs which have been selected as successful, effective programs.
2. Analyze the programs selected in consultation and coordination with appropriate vocational education administrative personnel stressing classroom educator evaluations to derive patterns of resource use characteristic of success.
3. Develop procedures for applying effective resource use patterns to estimate requirements of personnel, equipment, supplies, and other elements for the successful vocational education of disadvantaged students.
4. Evaluate the understanding and implementation of the statute and its supporting Office of Education rules and regulations as encountered in the course of this research project.
5. Identify problems which may be encountered in extending the more successful resource use patterns on behalf of all vocational education disadvantaged students and suggest means for eliminating or resolving problems and difficulties identified.
6. Summarize findings for making assistance to the disadvantaged in vocational education programs more effective, including a discussion of the adequacy of the 15% set-aside funds.

MAJOR PRODUCTS

Three major products constitute the outcome of Contract Number OEC-0-74-1754, "Assessment of Need in Programs of Vocational Education for the Disadvantaged and Handicapped." These three products comprise the three volume final report.

Final Report

Volume I, The Final Technical Report, is an overview of the entire project as well as an in-depth report on the achievement of project goals and the completion of project tasks. More specifically, Volume I is a narrative that explains those procedures, activities, conclusions, and recommendations generated by System Sciences, Inc. pursuant to the completion of the contract. Among the procedures and activities included in this report are seminars, State vocational education plans review, the nomination process of outstanding programs, instrument development, survey field tests, survey methodology, site visitation, analysis of data collected during the needs assessment, and conclusions and recommendations. Additionally and importantly, there is included in Volume I a discussion of the development of a methodology to generate estimates of need on a national level. This discussion includes comments on existing techniques, elements integral to a functional model, data requirements, and the promise and problems of such an effort. Volume I also includes a series of appendices which constitute important by-products of the research effort.

Descriptions of Programs

Volume II of the final report is a Compendium of Descriptions of Effective Programs for Vocational Education Disadvantaged Students, developed from information received in the national survey of programs. Fifty-five entries are included in the compendium, drawn from the total of 158 programs surveyed during the research project. This document is designed to serve as a planning/implementation reference on alternative models of resource utilization for meeting the needs of vocational education disadvantaged students. Since each of the 158 programs included in the needs assessment survey was nominated on the basis of being a highly effective program, the following criteria were used to select the compendium entries:

1. Regional/ State representation--this specification insured a geographic mix of different areas of the country. All ten HEW regions and 39 of the 50 states are represented.
2. Model representation by program type and program environment--this specification insured a mix of programs in terms of the four program types and the four environmental categories developed by System Sciences, Inc. to classify programs. Type of

environment is a population based classification utilizing the areas defined in August 1973 by the Office of Management and Budget as Standard Metropolitan Statistical Areas (SMSA). The four specific classifications are: (a) SMSA Central City, (b) SMSA Non-Central City, (c) Non-SMSA Urban, greater than 10,000 population, and (d) Rural, less than or equal to 10,000 population. Program type is a second classification system which focuses on the services, techniques and procedures employed to meet the needs of the vocational education disadvantaged students. The specific classifications are: (a) regular program with support services, (b) modified regular program with support services, (c) special program, and (d) work experience programs. For additional information about the classification systems and the programs involved, refer to Chapter III and/or to Appendix C.

3. Utilization of a strategy, technique or procedure that may prove useful in another setting --this specification insured that innovative and/or particularly noteworthy ideas that greatly enhanced the success of a local program included in the compendium would receive attention such that it might be modified/utilized in another setting.

4. Adequacy of information in terms of completeness of questionnaires and additional information --program administrators were asked to complete the administrator questionnaire and to provide additional program information. A total of 120 programs, or 76% of the sample responded to the survey initiative by supplying either or both of the above kinds of information. This does not insure that all entries contain the same information; however, no compendium was written for which the available information was considered insufficient to provide an accurate portrayal of the program.

Each compendium entry is written to conform to a general format consisting of seven parts: (a) identification information, (b) program information, (c) instructional program, (d) special features, (e) results of evaluation efforts, (f) funding mechanisms, and (g) who to contact for more information.

Identification Information

The heading for each compendium entry includes the program name, the address, and a contact person that local and/or State officials may communicate with in order to secure additional information about the program at the local level.

Program Information

The program information portion of each entry contains general descriptive information about each particular programmatic effort to meet the needs of vocational education disadvantaged students. This information includes the type of program, the population served by number and category of student, the type of facility where the program is located and operated, the geographic area that is served by the program and a typical schedule of program operation.

Instructional Program

The instructional program portion of the program description includes a statement of the overall program aims, the specific goals or objectives around which the effort is built, the vocational skill areas taught, and any special curricular training features which have been developed.

Special Features

Special features includes an array of information ranging from recruitment procedures to community involvement to special in-service education activities held for instructors of a given program. Additionally, placement and follow-up procedures, linkages with other agencies, and arrangements with local labor unions are discussed. The special features section may suggest effective, low cost arrangements and innovations with high transportability.

Results of Evaluation Efforts

When such information was available, the results of evaluation efforts conducted by the local education agency or by the State agency are included. Of particular interest is the variety of measured outcomes evaluated and the degree of effectiveness experienced by the programs. Within the compendium entries these ranged from development of self concept to adequacy of skill training.

Funding Mechanisms

Information about funding varied considerably among programs, both in terms of amount of resources and patterns of resource utilization. Where available, the compendium entries contain information about the sources of funding for each selected program, the average cost per vocational education disadvantaged student, the average cost per regular vocational education student, and the comparative difference in cost between the two populations. Additionally, there is an indication of spending by priority area. The priority areas, referred to as program components, represent eight major areas of program expenditures developed by the project staff to quantify and classify the data gathered during the national survey. The eight specific areas of funding include the following:

1. Program Support Services,
2. Instructional Materials, Supplies, and Related Needs,
3. Instructional Personnel,
4. Instructional Related Needs,
5. Staff Development,
6. Community Public Relations,
7. Administration and Supervision, and
8. Facilities.

During the course of the national survey, local program administrators were asked to indicate either the amount spent or percentage of costs for the past two years for each of these components as well as specific elements within each component. Additionally, administrators were asked to indicate which of the components (and elements) they judged most essential to a continuing, successful program. Information regarding linkages with other agencies relative to funding is also included.

Who to Contact for More Information

The last paragraph of each compendium entry includes the name and address of both the local and State contact person with responsibility for the program. The reader is encouraged to contact these persons relative to accessing additional information for program planning and development.

Bibliography

Volume III, Bibliography, was compiled to provide vocational educators with a convenient, comprehensive survey of pertinent literature relative to vocational education programs which meet the needs of vocational education disadvantaged students.

The bibliographic entries have been grouped into five major sections as follows: (1) demonstration projects, (2) research studies, (3) curriculum development materials, (4) in-service training information, and (5) program planning and development information. Within each of these sections the annotations are subdivided into three categories: (a) journal articles, (b) information retrieval system publications, and (c) monographs and government publications.

The format of the annotation has been designed to provide the vocational education practitioner with quick access to relevant information. The format includes: (1) description of the article, (2) suggested use, and (3) reference for obtaining the report. The description of the article offers a brief discussion of the purpose and major focus of the article and information contained therein. Each annotation contains suggestions for use of the information by vocational students, teachers and administrators; specifically, there is identified the most probable user and how it may be of value. Lastly, each annotation provides sufficient information for the reader to obtain a copy.

This bibliography was developed by accessing the Educational Research Information Center, the Current Index to Journals in Education, Abstracts of Instructional and Research Materials in Vocational and Technical Education, U.S. Department of Health, Education and Welfare documents, Department of Labor documents, materials from various State Departments of Education, and independent library holdings. Of the hundreds of possible entries surveyed, the entries cited were selected to include those believed most relevant to vocational education disadvantaged practitioners.

II. LITERATURE REVIEW, ISSUE ORIENTED SEMINARS, AND STATE PLANS ANALYSIS

A series of initiatory activities were outlined through which the goals and objectives of the project were achieved. These tasks included consultation with the USOE Project Officer; literature update and review; seminars; State plans analysis; State plans report; development of analysis methodology; survey plan development; conducting the national survey; analysis and evaluation of the results, and, project documentation. The first several of these tasks were preliminary to the development of the survey plan, conducting the survey, analyzing the results, and devising a methodology useful for estimating needs at the national level.

Three tasks in particular, the literature update and review, the seminars, and the State plans analysis and report were useful for providing preliminary information necessary for devising the fundamental conceptual framework.

REVIEW AND UPDATE OF THE EXISTING LITERATURE

The review and update of existing literature involved an extensive review of published literature, retrieval system information, monographs, and government publications for the purposes of extracting information applicable to developing needs assessment methodologies. Also, information considered potentially useful to vocational education practitioners at State and local levels to assist them in more effectively meeting the needs of the vocational education disadvantaged was reviewed.

One outcome of performing this task is a current, annotated bibliography of information, prepared as Volume III of this final report and intended as a separate, easily disseminated reference for vocational education practitioners. System Sciences. Inc. has developed this information update as a mindful strategy to assist practitioners in keeping abreast of new or purportedly new information as it becomes available. Further, not only is the format designed to assist practitioners in overcoming the information glut, but also it is designed to mitigate the time press of decision-making, the exigencies of planning, and the energy absorbed by everyday responsibilities.

The 121 entries in the annotated bibliography were selected from among approximately a thousand possible entries on the basis of potential usefulness for local needs assessment or adaptation of innovative ideas by local and/or State vocational education administrators. The selections also reflect the literature that was useful for developing the needs assessment methodology and analysis instruments. For example, the reports on "Operation Bridge" suggested innovative support services such as total family counseling and tutorial assistance. [5] Several government documents such as Abstracts of Exemplary Projects in Vocational Education listed a number of programs which utilize innovative practices and which were considered for inclusion in the survey. [6] Other entries such as Lawrence Weisman's "Program Implications of Characterisitics of Disadvantaged Students" describe novel patterns of resource utilization which hold potential for adaptibility to a new situation or environment. [7]

The emphasis which provided continuity to the selection process is the potential to impact on services delivered to vocational education disadvantaged students. The reader will find the Bibliography contained in Volume III of this final report.

CONDUCT SEMINARS

During the course of the research project, System Sciences, Inc. conducted two seminars of one and two days duration which facilitated the accomplishment of the project goals. The complete records of agenda, presentations, and notes for these conferences are presented in Appendix A of the Technical Report, Volume I.

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[5] Henry Deptro. Operation Bridge: An Innovative Comprehensive Vocational Education Program for Disadvantaged Youth. First Interim Report, ED#062549 VT015254 of the ERIC Retrieval System, February 25, 1972.

[6] U.S. Department of Health, Education and Welfare. Abstracts of Exemplary Projects in Vocational Education. Washington, D.C.: U.S. Government Printing Office, June 1973.

[7] Lawrence A. Weisman, "Program Implications of Characteristics of Disadvantaged Students." Illinois Career Education Journal. Vol. 32, No. 2, (Winter 1971), pp. 6-9.

Each seminar was designed to provide a forum for a limited number of experts in the field to be brought together to discuss specific issues. The participants were chosen through consultations with the Project Officer, project consultants and project staff. Each participant was provided with issues or questions to address and was asked to prepare a several page abstract of their presentation. These agendas and abstracts are also included in Appendix A.

Participants in the first seminar, held in Washington during September 1974, focused on the questions of:

- rules of thumb and justification for estimating disadvantaged needs in rural and urban environments;
- defining program elements to be included in a successful vocational education program for the disadvantaged;
- effective administrative arrangements for implementing "successful" vocational education programs for the disadvantaged.

The day-long session featured presentations by Dr. Walter M. Arnold, President of Arnold Associates, who chaired the seminar; Dr. Bryan V. Fluck, Director of the Admiral Peary Area Vocational-Technical School in Ebensburg, Pennsylvania; Mr. James W. Smith, Coordinator of the Special Programs Unit for the Division of Vocational and Technical Education, Illinois; and, Mr. James Little, Vocational Director for the East St. Louis, Illinois School System.

During the course of the day-long seminar, a series of recommendations keyed to the designated issues for discussion were generated. Among the generated recommendations, the following several were judged to be the most important:

1. regional labor market surveys should be conducted in order to match manpower supply and job demand with vocational training opportunities;
2. local markets must be convinced of the worth and adequacy of the training, including confidence in the ability to gear up for training for prospective industries;
3. relative success of graduates can be judged through follow-up guidance services;

4. vocational education should investigate the feasibility of becoming the coordinating agency of various social service programs in the area;
5. vocational education programs have a responsibility to access all possible community resources and to involve all possible community citizens and groups;
6. socialization of students is a prime responsibility of any successful vocational education program;
7. plans, at all levels--local, State, and national--should be written such that they comply with the law, and that they include an operational component;
8. LEA's should sponsor third party evaluations of vocational education disadvantaged programs in order to gain more accurate knowledge of relative success, effectiveness, and needed improvements;
9. vocational education disadvantaged programs might benefit from increased emphasis on development of individualized instructional curriculum materials; and
10. in-service education is a prerequisite for successful vocational education disadvantaged programs.

Presenters at the second seminar, held in Phoenix, Arizona, in conjunction with the NACVE/SACVE Joint Day of Planning, 13 November - 15 November, 1974 were asked to address the following issues:

- legislative implications of estimates of need in vocational education for the disadvantaged and handicapped;
- insuring accountability of vocational education programs to disadvantaged and handicapped population: (a) role of State Advisory Councils, and (b) role of State education agency officials with responsibility for the disadvantaged and handicapped; and,
- alternative approaches for meeting the needs of disadvantaged and handicapped in vocational education.

Each of these topics was addressed during a session attended by seminar participants, SSI staff and delegates to the NACVE/SACVE Conference. For example, the session dealing with "legislative implications of estimates of need in vocational education for the disadvantaged and handicapped," held the evening of November 13 was attended by 23 NACVE/SACVE delegates as well as the presenters and the SSI staff. The result was a good exchange of information which resulted in the generation of several recommendations.

Among the more important ones were:

1. maintaining prescribed minimums which must be spent on the disadvantaged and handicapped;
2. increase the overall dollar expenditures;
3. develop a system that does permit somewhat more flexible use of designated, categorical funds;
4. assistance in developing identification systems for better serving students;
5. improved dissemination of important and immediately useful information;
6. increased emphasis on in-service training of teachers in order that they may more adequately deal with vocational education disadvantaged students;
7. emphasis on local needs assessment;
8. reorganize funding mechanisms to channel more money directly to the point of impact; and
9. mandated, extensive coordinated planning to better meet the needs of vocational education disadvantaged and handicapped students.

Presenters for the November 13 evening session included: Dr. Melvin Barlow, Director, Division of Vocational Education, University of California at Los Angeles; Mr. Lee Cornelsen, Planning Officer, Bureau of Occupational and Adult Education, Office of Education; Mr. Reginald Petty, Deputy Director, National Advisory Council on Vocational Education; and Dr. Joseph Clary, Executive Director, North Carolina State Advisory Council on Vocational Education, who chaired the meeting.

November 15 was a day-long session, again combining presenters, SSI staff and NACVE/SACVE delegates to discuss the remaining two aforementioned issues. The following points are among the most critical ideas that were generated during this discussion:

1. increased in-service education is an absolute necessity;
2. SACVE must expand its efforts to insist on accountability and insure that vocational education programs for disadvantaged and handicapped students are more than bookkeeping exercises;
3. effective State Department of Education and SACVE cooperation and coordination must be achieved;

4. information about viable program models must be disseminated more efficiently in order to assist local program directors to do a more effective job.

Presenters for the November 15 meeting included: Dr. Joe Clary, who made a presentation in addition to serving as chairman; Mr. Robert Kennon, Supervisor, Disadvantaged and Handicapped Programs Unit, Vocational-Technical Education Service, State of Michigan Department of Education; Mr. Clifford Jump, Michigan State Advisory Council on Vocational Education; Mr. Stewart Miller, Supervisor, Special Needs Programs, Division of Vocational Education, Arizona; Mr. Larry Noble, Coordinator of Rehabilitation Services, Colorado Indian Tribes; and Mr. Jack Riddle, Director, Maricopa County Skills Center, Phoenix, Arizona.

STATE PLANS ANALYSIS

The purpose of the review and analysis of State Plans for Vocational Education was to identify trends and changes in approach to serving the disadvantaged and handicapped as well as planned and on-going programs to serve the disadvantaged. This analysis focused on three major aspects of the State plans: (1) definitions of disadvantaged and handicapped students used by the States, (2) means used by the States to determine the population in need, and (3) identification of emerging trends and strategies used by the States in programs for these two target populations. A total of fifty-two (52) plans were reviewed.

In reviewing the various State plans in terms of the definitions used to identify disadvantaged and handicapped students, an attempt was made to determine the following:

1. utilization of the standard statutory definitions;
2. utilization of non-standard categories in defining disadvantaged and handicapped;
3. effect elements included in State plan definitions; and
4. the extent to which States included an "inability to succeed" clause in definitions used.

The term "standard definition" means the definitions provided in Section 102.3--Definitions, Federal Register, Vol. 35, No. 91, Saturday, May 9, 1970, page 7335, and reproduced in Figure II-1.

State Plan Definitions: Disadvantaged

Tables II-1 and II-2 provide frequency data on the types of definitions used to identify the disadvantaged.

Of the 52 State plans reviewed, 40 used the standard definition, either quoting it verbatim or paraphrasing it. Twelve State plans used non-standard categories only, and thirty-one State plans used a combination of the standard definition and non-standard categories. A total of 49 different non-standard categories were used. Compared with a previous analysis of State plans conducted by SSI,[8/] this figure indicates an increased usage of non-standard categories, from 33 to 49, by the State vocational education agencies.

A problem noted in the earlier SSI study was a confusion on the part of vocational educators between cause and effect. The analysis of the FY75 plans indicates that this confusion still exists, as evidenced by the number of "cause" categories found in the list provided in Table II-1. It should be noted, however, that "effect" elements were mentioned in some of the State plan definitions. Table II-2 lists those effect elements that were included, and indicates the number of States using them in their definitions. Further, 40 of the State plans included the "inability to succeed" clause in their definitions.

State Plan Definitions: Handicapped

Tables II-3 and II-4 provide frequency data on the aspects of definitions for the handicapped under consideration in the analysis.

Of the 52 State plans reviewed, 38 used the standard defintion, either quoting it verbatim or paraphrasing it. Thirteen State plans used only

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[8/] System Sciences, Inc., Classification System and Definitions of Categories of the Disadvantaged and the Handicapped for Reporting on Vocational Education Programs, USOE, Contract No. OEC-0-70-4889, October 29, 1971.

Figure II-1

Definition of the Disadvantaged

(i) "Disadvantaged persons" means persons who have academic, socioeconomic, cultural, or other handicaps that prevent them from succeeding in vocational education or consumer and homemaking programs designed for persons without such handicaps, and who for that reason require specially designed educational programs or related services. The term includes persons whose needs for such programs or services result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large, but does not include physically or mentally handicapped persons (as defined in paragraph (o) of this section) unless such persons also suffer from the handicaps described in this paragraph.

Definition of the Handicapped

(o) "Handicapped persons" means mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired persons who by reason of their handicapping condition cannot succeed in a vocational or consumer and homemaking education program designed for persons without such handicaps, and who for that reason require special educational assistance or a modified vocational or consumer and homemaking education program.

Source: Section 102.3--Definitions, Federal Register, Vol. 35, No. 91, Saturday, May 9, 1970, page 7335.

TABLE II-1
1974-1975
STATE PLAN DEFINITIONS: DISADVANTAGED

Standard Definition Only	9
Standard Definition and Non-Standard Categories	31
Non-Standard Categories Only	12
TOTAL:	52

* * * * * * * * * * * *

Non-Standard Categories Used and Frequency

Poverty	25
Overage for Grade by 1 or More Years	19
Cultural Isolation Deprivation	17
Linguistic Isolation	14
Family Receiving Social Agency Support	12
Potential/Actual Dropout	11
Delinquency	11
Frequent Absences	10
Low Achievement	10
Under Achievement	10
Neglect	10
Low Reading Level	7
Needs Economic Assistance for Schooling	7
Presently/Frequently Unemployed	6
Title I ESEA Criteria	6
Member of Minority Group	5
Members of Migrant Families	5
Alienated from School Environment	5
Geographic Isolation	5
Ethnically Disadvantaged	5
Verbal and/or Written Communications Problems	4
Health Deficiencies	4
Intellectually Handicapped	4
Persons from Target Areas	3
Negative Self-Image	3
AFDC	3
Parental Neglect	2
Economically Illiterate	2
Broken Home	2
Lack of Motivation	2
History of Failure	2
Physically Handicapped & Disadvantaged	2
Residence in EDA Area	1
At Least 14 Years Old	1
Inability to Adjust to Democratic Society	1
Communication Problems	1
Poor Family Relations	1
Adult with < 8th Grade Education	1
Bilingual	1
Dropout with Good Scores	1
Disregard for Authority	1
Pregnancy	1
Correctional Institution Inmates	1
Failing 40% of Courses	1
Live in Families/Communities with Problems	1
Social Withdrawal	1
Live in Area of High Crime	1
Institutionalized	1
< 23%-ile on Standardized Achievement Test	1
Principal Family Wage Earner Unemployed or Underemployed	1
Identified by Teachers, Counselors, or Administrators as Needing Special Assistance	1
Emotional Problems	1
Poor Personal Relationships	1
Desire to Be in Voc-Ed Program, But Under Qualified	1

TABLE II-2

STATE PLAN DEFINITIONS: DISADVANTAGED
(1974-75)

EFFECT ELEMENTS INCLUDED

Language Deficiency	10
Reading and/or Writing Deficiency	12
Computational Deficiency	8
Hostile, Defiant Attitude to Others	10
Passive, Apathetic Personal Attitudes	6
Economically Disadvantaged	12
Geographic Isolation	6

* * * * * * * * * * * * *

"Inability to Succeed" Clause Included

Yes	40
No	12

TABLE II-3

STATE PLAN DEFINITIONS: HANDICAPPED

Standard Definition Only	18
Standard Definition and Non-Standard Categories	20
Non-Standard Categories Only	13
Categories Not Specified	1
TOTAL:	52

* * * * * * *

Non-Standard Categories Used and Frequency

Visually Handicapped	18
Mentally Retarded	18
Over 14 Years Old	3
Social Development	3
Emotionally Disturbed or Maladjusted	2
Communication Skills	2
Assessment of Performance	2
Perceptual Motor Development of Neurologically Impaired	1
Diagnosis of Physical or Mental Condition which Indicates a Vocational Education Program Will Help	1
Need for Remedial Reading	1
Slow Learner	1
Unable to Attend School	1
Physically Handicapped	1
Custodial	1
Criteria Established by Division of Special Education	1
Chronically Ill	1
Identified According to Testing Policies of DPE, DVR, or ESC	1
Handicap is a Substantial Obstacle to Employment	1
Minimally Brain Damaged	1
Pregnant Students	1
Motor Handicaps	1
Persons Identified by Special Education, Pupil Personnel, Mental Health, Vocational Rehabilitation	1
Non-violent	1
Able to Understand Simple Directions	1
Emotionally Stable to Function in a Group	1
Able to Profit from Instruction	1
Either eligible for or Enrolled in Special Education Classes	1

TABLE II -4

STATE PLAN DEFINITIONS: HANDICAPPED

EFFECT CATEGORIES INCLUDED

Educable Mentally Retarded	29
Trainable Mentally Retarded	19
Learning Disabled	12
Seriously Emotionally Disturbed	44
Crippled	44
Partially Sighted	27
Blind	28
Hard of Hearing	42
Deaf	41
Speech Impaired	40
Other Health Impaired	38
Multihandicapped	7

* *

"Inability to Succeed" Clause Included

Yes	31
No	21

non-standard categories, and twenty State plans used a combination of the standard definition and non-standard categories. One State plan did not specify any categories, nor did it apply the standard definition. A total of 24 non-standard categories were used. Compared with the previous analysis of State plans conducted by SSI, this figure indicates an increased use of non-standard categories, from 10 to 24, by State vocational education agencies. It should be noted that the categories "visually handicapped" and "mentally retarded" are included in the list in Table II-3. The purpose for doing this was to determine how many State plans mentioned these general categories as opposed to the more specific listing of educable and trainable mentally retarded, and partially sighted and blind. Comparisons can be made between the data given in Table II-3 with Table II-4. Eighteen State plans used the broad categories of mentally retarded and visually handicapped. Twenty-nine State plans used the specific category, educable mentally retarded, while 19 used the more specific category, trainable mentally retarded. Twenty-seven State plans used the more specific category, partially sighted; and twenty-eight State plans used the more specific category of blind. These more specific categories were outlined in the U.S.O.E. publication; Guidelines for Identifying, Classifying, and Serving the Disadvantaged and Handicapped Under the Vocational Education Amendments of 1968.[9/] Also outlined in this publication were the effect categories of "learning disabled," and "handicapped."

The increased use of non-standard categories for the handicapped indicates that confusion about the cause-effect issue still exists. Moreover, some of the categories used in the State plans for the handicapped indicate some degree of confusion between the disadvantaged and handicapped definitions, although this is minimal.

[9/] Office of Education, Guidelines for Identifying, Classifying, and Serving the Disadvantaged and Handicapped Under the Vocational Education Amendments of 1968. Washington, D.C.: U.S. Department of Health, Education, and Welfare, National Center for Educational Statistics, DHEW Publication, No. (OE) 73-11700, 1973.

The data provided in Table II-4 on the type and frequency of effect categories included is more encouraging, since it tends to indicate that States are using the Office of Education guidelines and classification document in identifying and classifying handicapped students in vocational education programs.

On the other hand, only 31 of the 52 State plans included the essential element of an "inability to succeed" clause in their definition. This is a much lower percentage (60%) than found in State plan definitions for the disadvantaged (80%).

Universe of Need

In any planning effort in which provision of human services is involved, an essential first step is determining the population of concern, and quantifying or estimating as best as one can the number in that population group. On this point, the FY75 State plans were very weak. In planning the analysis, it was hoped to be able to determine the following:

1. The number of disadvantaged students at the secondary level projected to receive services in FY75, and in FY79;
2. The percent of disadvantaged students of the total projected student enrollment in Vocational Education at the secondary level in FY75, and in FY79;
3. The percent of disadvantaged students projected to be served in secondary vocational education programs of the total estimated number of disadvantaged students of secondary school age in FY75, and in FY79;
4. The number of handicapped students, at the secondary level, projected to receive services in FY75, and in FY79;
5. The percent of handicapped students of the total projected student enrollment in Vocational Education at the secondary level in FY75, and in FY79;
6. The percent of handicapped students projected to be served in secondary vocational education programs of the total estimated number of handicapped students of secondary school age in FY75, and in FY79; and,
7. Disaggregated projected enrollment figures for these two target populations into (a) enrollment in gainful programs; and (b) enrollment in consumer and homemaking and other program areas.

Due to a number of limitations of the data available in the State plans, this proved to be an impossible task. The limitations encountered included: (a) enrollment figures which could not be disaggregated, (b) information not provided, (c) lack of compatibility of the data between States, (d) few states estimated their universe of need in terms of these two target populations, and only three or four broke this information down by level, and (e) internal inconsistencies within State plan definitions and data which made the data suspect and, therefore, not reliable.

Illustrated in Figure II-2 are examples of data from four States for the disadvantaged and from three States for the handicapped which the project had hoped would be obtainable from the State plan documents, on a State by State basis. These examples are unusual; few states provided as much detail.

One of the serious deficits is the failure of States to estimate their populations of concern by level. If this were done, vocational education planners and administrators would know at least the percentage of disadvantaged and handicapped students who potentially qualify for vocational education that are actually being served. Instead, in the several instances where estimates are made, they are not broken down by age groups or grade levels. They frequently are either estimates for a total State population or sketchy figures pulled from a variety of sources.

Table II-5, Estimates of Populations in Need, provides a listing of the means of determination and of the frequency of use for estimating the disadvantaged and handicapped in the State plans. Of significance is the number of states not specifying any means for determining/estimating disadvantaged (N=20) or handicapped (N=36) populations.

Emerging Trends and Strategies

The third major aspect of the review and analysis of the State plans was the identification of trends and changes in approach being used to provide vocational education to the disadvantaged and handicapped.

FIGURE II-2. EXAMPLES OF PROJECTED ENROLLMENTS AND NEEDS DATA AVAILABLE FROM SELECTED STATE PLANS

DISADVANTAGED

SECONDARY LEVEL

STATE	PROJECTED ENROLLMENT FY75	PERCENT OF TOTAL PROJECTED VOC-ED ENROLLMENT	PERCENT OF TOTAL PROJECTED DISADVANTAGED STUDENT POPULATION	PROJECTED ENROLLMENT FY79	PERCENT OF TOTAL PROJECTED VOC-ED ENROLLMENT	PERCENT OF TOTAL ESTIMATED DISADVANTAGED STUDENT POPULATION
"A"	37850	49	35.5	48,440	54	44
"B"	26693	34	32	31,089	22.7	36.6
"C"	7690	13	12.6	13,900	18.7	22
"D"	17793	7.5	21	26,200	N/A	31

HANDICAPPED

SECONDARY LEVEL

STATE	PROJECTED ENROLLMENT FY75	PERCENT OF TOTAL PROJECTED VOC-ED ENROLLMENT	PERCENT OF TOTAL PROJECTED HANDICAPPED STUDENT POPULATION	PROJECTED ENROLLMENT FY79	PERCENT OF TOTAL PROJECTED VOC-ED ENROLLMENT	PERCENT OF TOTAL ESTIMATED HANDICAPPED STUDENT POPULATION
"A"	791	5	49	1762	5	94
"B"	4450	5.7	53.6	5600	4	65
"C"	336	1.7	4.4	456	1.7	5.8

TABLE II-5

ESTIMATES OF POPULATION IN NEED

DISADVANTAGED: MEANS OF DETERMINATION AND FREQUENCY

Means not specified	20
Number of total population unemployed	12
Poverty, low income	11
Number of school dropouts	11
Number of persons receiving public welfare	7
Data, information, and reports provided by Federal and State agencies[*]	9
Economically depressed/high unemployment areas	6
Ethnicity (minority groups)	5
Estimates of percentage of students who are disadvantaged (15-15.5%)	4
Number of unemployed youth, ages 16-19	3
Migrant population	1
Geographic region of the state	1
Number defined as educationally disadvantaged	1
Population in correctional facilities	1

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[*] These agencies included: U.S. Census Bureau, National Center for Educational Statistics, State Department of Education, State Manpower Planning Report, State Department of Labor, State Department of Economic Development, and State Employment Security Commission

HANDICAPPED: MEANS OF DETERMINATION AND FREQUENCY

Means not specified	36
Data, information, and reports provided by Federal, State, and private agencies[**]	13
Estimates of percentage of students who are Handicapped	7
(range from 3% to 10%)	1
Number of population currently institutionalized	1
Number of unemployed youth, ages 16-19	1
Number of school dropouts	1
Number of children of women receiving AFDC payments	1

[**] These agencies included: U.S. Census Bureau, State Employment Security Commission, State Department of Vocational Rehabilitation, Planning and Program Section of State Department of Education; State Annual Manpower Planning Report, State Department of Labor, State Department of Economic Development, State Programs for Exceptional Children, State University Research Foundation Report, and a report from a private agency.

The State plans generally provided limited description of the strategies proposed to reach their stated goals and objectives. Where this type of information was available, it was reviewed and coded into one of six areas: administrative, curriculum, program areas, service areas, staff development, and delivery system strategies.

Table II-6 provides a frequency count of trends and strategies for each of these six areas. This data suggests that states are continuing to move in the direction of integrated programs for disadvantaged and handicapped students through curriculum modifications, expansion of work study and co-op and other supportive services. However, there still seems to be a tendency to develop special, segregated programs for the handicapped as an administrative strategy in serving this group (N=11). Increased emphasis on in-service training for teachers of the disadvantaged and handicapped was also evident from this review of State plans.

Programs described in the State plans using innovative approaches were earmarked under the area of delivery system strategies, and included in the project's file of nominations of successful vocational education programs.

The continuing confusion over definition of the vocational education disadvantaged as evidenced in the review and analysis of the State plans required that the design of data collection instruments insure common understanding about the vocational education disadvantaged population among respondents. The federal definition, including primary effect categories, was incorporated into the questionnaire to achieve this.

The review and update of the literature, review and analysis of State plans, and the seminars which addressed specific key issues of the project provided helpful background information and perspectives for the development of the conceptual framework and survey plan.

In developing the conceptual framework, an overall model for program assessment was needed which would theoretically incorporate all of the variables which affect success levels in programs. An input-process-output

TABLE II-6

EMERGING TRENDS AND STRATEGIES

Administrative	
Integration of Disadvantaged and Handicapped students into regular Voc-Ed programs	17
Increase number of special programs, especially for the Handicapped	11
Develop handbook for teachers	1
Develop public relations activities	1
Standardization of existing programs	1
Utilization of other state agencies	1
Staff liaison with Voc. Rehab. and Special Education	1
Establish Office of State Supervisor for Disadvantaged and Handicapped	1
Coordination with private vocational schools	1
Improve reporting system	1

Curriculum	
Individualized instruction in regular programs	9
Develop supplementary curriculum materials	7
Develop curriculum for alternative courses	5
Develop curriculum in cluster areas	3
Competency-based instruction	3
Special tools and equipment for Handicapped	3
Mobile curriculum labs	3
Expand curricular offerings for Disadvantaged and Handicapped students	2
Media center for remedial academic activities	1
English as a second language program	1

Program Areas	
Expansion of work study opportunities	25
Co-op work programs	12
Expand enrollment in consumer and homemaking programs	11
Career exploration programs	10
Pre-Vocational Programs for Handicapped	7
Work orientation and work experience	6
Occupational (marketable) skills programs for Handicapped students	4
Industrial arts education programs	4
Special demonstration-pilot programs	3
Work adjustment programs	2
On-the-job training	2
Increase participation of Disadvantaged and Handicapped students in Voc-Ed youth organizations	2
Develop post-secondary program for Handicapped students	1
Increase number of agency-based programs	1
Develop multi-group programs	1
Increase programs available in economically depressed areas	1
Develop reservation-based programs	1
Expand sheltered workshop programs	1
Contract instructional services	1

Service Areas	
Increase ancillary and supportive services (i.e., compensatory education)	24
Improve vocational guidance and counselling services	15
Diagnostic and prescriptive services	6
Student identification and evaluation procedures	4
Develop improved occupational information system, especially for dropouts	2
Job coordination services	
Job placement services	2
Evaluation of readiness for work	1
Student follow-up services	1
Transportation services	1

Staff Development	
Increase in-service training (emphasis mainly placed on curriculum development)	18
Teacher pre-service programs	3
Increased emphasis on interdisciplinary approach	2
Conduct state-wide conferences for Voc-Ed practitioners	2
Trade workshops with industry	1

Delivery System Strategies	
Implement vocational area centers concept	3
Optional schools program, evening offering	1
Coordinated vocational education training	1
Increase programs available for Disadvantaged and Handicapped in comprehensive high schools	1
Expand services to handicapped students other than the educable mentally retarded and hearing impaired	1
Give priority in programs for the handicapped to educable mentally retarded population	1

model (described in more detail in the methodology section of this volume, Chapter III) was selected as the most appropriate representation of the dynamics of program operation. Utilizing this model, input variables (i.e., program elements) were related to output variables (i.e., program outcomes) via a variety of processes or modes of program operations, which were classified into four program types. To account for differing problems in developing and implementing vocational education programs in different settings, a second classification scheme was developed. Programs were classified into four types of environmental settings to facilitate cost comparisons and comparisons of resource utilization patterns between differing environments.

III. METHODOLOGY AND PROCEDURES

SELECTION OF SURVEY PROGRAMS

Nomination Procedures

A two-phase, multi-level nomination process was used to secure the survey sample. Phase One, initiated during the second project month, consisted of request letters to State vocational education officials with responsibility for vocational education Special Needs programs, and to Executive Directors of the State Advisory Councils for Vocational Education requesting nominations of the two or three "most successful" vocational education programs for the disadvantaged within each state. A second approach used during Phase One was to access the list of programs on file in the State Programs and Services Branch, Division of Vocational and Technical Education, Bureau of Occupational and Adult Education, Office of Education. Selection of programs from this file for inclusion in the survey was done in consultation with the State Programs and Services Branch Program Specialist for the Disadvantaged.

These approaches generated a list of program nominations which were screened according to the following criteria: (a) program focus was on the secondary level, (b) programs were operational for at least their second year, (c) emphasis was given to programs that train disadvantaged students for gainful employment or continuing education, (d) emphasis was directed to programs that serve disadvantaged students in regular vocational education classes, modified by curricular changes, and/or with additional support services or work experience, and (e) consideration was given to the program's ability to attract, retain, train-to-completion, graduate, place, and follow-up vocational education disadvantaged students. Further, each list was compared to the other two lists in order to identify cross-referenced programs.

In the fifth project month, Phase Two of the nomination process was initiated. This approach included a series of letters, phone conversations, and access to alternative information sources. Letters requesting nominations were mailed to the Office of Education Regional Vocational Education Program Officers. Letters of request for nominations also were sent to each of the Concerted Services in Training and Education pilot projects underway in primarily rural areas in 15 States to gather information on vocational education programs for vocational education disadvantaged students in their areas. Follow-up letters and phone calls were directed to State Directors of Special Needs Programs in order to clarify questions and secure additional nominations. Lastly, exemplary programs identified through the literature review were included in the list. Again the programs were screened by using the criteria listed above, and a check of cross-referenced nominations was made. Sample correspondence used in the nomination process is included as Appendix B.

The two-phase nomination process coupled with the screening procedure yielded an inventory of one hundred fifty-eight (158) "most successful" programs which serve populations of vocational education disadvantaged students. Appendix C is a list of these selected programs and includes the program name, address, contact person, source of nomination, environment type, program type, success criteria checked and type of information received as well as explanatory information about each of these means of categorization. Every state except Connecticut, Washington, and New Mexico was represented by at least one program nomination. Additionally, Puerto Rico and Washington, D.C., are represented by program nominations. Including duplicate count cross-referenced programs, the results of the nomination process were as follows:

1. State Advisory Council Nominations, 47 programs (30%);
2. State Directors of Special Needs Programs, 102 programs (65%);
3. State Programs and Services Branch, DVTE, files, 26 programs (16%);
4. Other, 13 programs (08%).

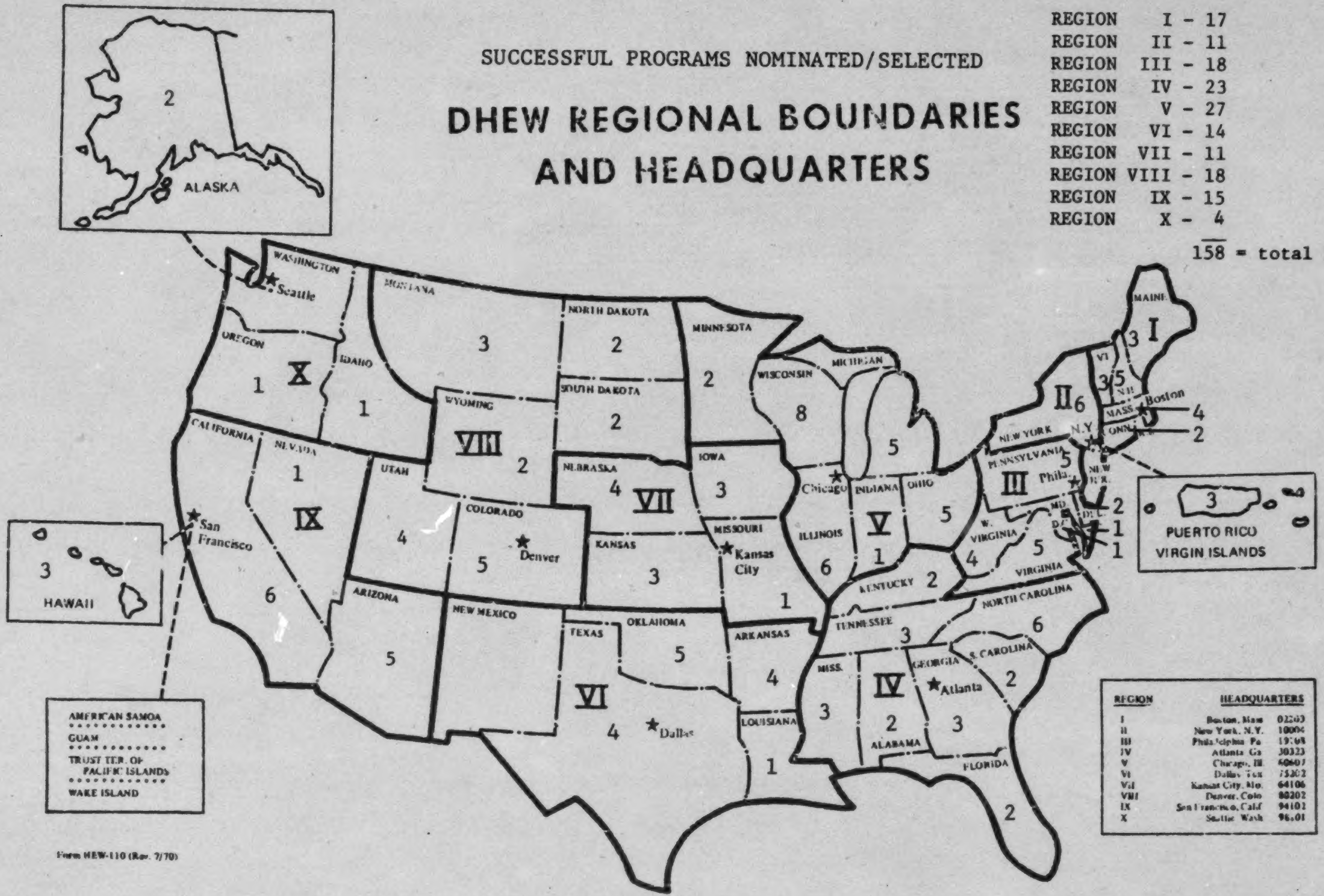
A total of thirty (30) programs were nominated by more than one source (i.e., cross-referenced).

Programs Involved in the Study

Figure III-1 indicates the number of programs, by Region and State, nominated and selected for inclusion in the study through the aforementioned process. The program administrator for each of these programs was invited

Figure III-1

SUCCESSFUL PROGRAMS NOMINATED/SELECTED


DHEW REGIONAL BOUNDARIES
AND HEADQUARTERS
ALASKA
2
WASHINGTON
★Seattle
OREGON
1
X
IDAHO
1
MONTANA
3
WYOMING
VIII
2
NORTH DAKOTA
2
SOUTH DAKOTA
2
MINNESOTA
2
WISCONSIN
8
MICHIGAN
5
MAINE
3
I
VT
3
N.H.
5
MASS
★Boston
4
CONN
2
R.I.
NEW YORK
II
6
N.Y.
PENNSYLVANIA
III
5
Phila.
NEW JER.
2
MD
DEL
D.C.
1
1
PUERTO RICO
VIRGIN ISLANDS
3
CALIFORNIA
★San Francisco
6
NEVADA
1
IX
UTAH
4
COLORADO
★Denver
5
NEBRASKA
4
VII
IOWA
3
★Chicago
INDIANA
OHIO
5
V
ILLINOIS
6
1
KANSAS
3
MISSOURI
★Kansas City
1
W. VIRGINIA
4
VIRGINIA
5
KENTUCKY
2
TENNESSEE
3
NORTH CAROLINA
6
HAWAII
3
ARIZONA
5
NEW MEXICO
TEXAS
OKLAHOMA
5
VI
4
★Dallas
ARKANSAS
4
LOUISIANA
1
MISS.
3
IV
ALABAMA
2
GEORGIA
★Atlanta
3
S. CAROLINA
2
FLORIDA
2
AMERICAN SAMOA
GUAM
TRUST TER. OF PACIFIC ISLANDS
WAKE ISLAND
Form HEW-110 (Rev. 7/70)

REGION	HEADQUARTERS	
I	Boston, Mass	02203
II	New York, N.Y.	10007
III	Philadelphia Pa	19108
IV	Atlanta Ga	30323
V	Chicago, Ill	60607
VI	Dallas Tex	75202
VII	Kansas City, Mo.	64106
VIII	Denver, Colo	80202
IX	San Francisco, Calif	94102
X	Seattle Wash	98101

REGION	I	17
REGION	II	11
REGION	III	18
REGION	IV	23
REGION	V	27
REGION	VI	14
REGION	VII	11
REGION	VIII	18
REGION	IX	15
REGION	X	4
		158 = total N

to participate in the needs assessment survey. Figure III-2 indicates those programs whose administrator responded affirmatively to the invitation by completing the questionnaire. Ninety-eight programs (62%) of the sample returned the completed questionnaire. These 98 programs served 1% of the total vocational education disadvantaged secondary enrollment in the United States for fiscal year 1974. [10/] Further, eighty-nine programs (56%) of the sample provided supplemental information about their program. While a number of programs provided both questionnaire and supplemental data, some administrators who provided information did not fill out the questionnaire; similarly, some administrators who filled out the questionnaire did not forward additional information. Combining both information sources by means of a non-duplicative count, 120 programs or 76% of the sample responded affirmatively to the survey. Appendix C, in addition to listing the programs, also includes a notation on the type of response provided by the local administrator.

Due to the complexity of developing a methodology for an assessment of need on a national level, the originally anticipated sample was expanded to 158 programs to reflect the broadest possible range of programs. The breakdown of responding programs by program type and program environment yielded the following results:

Program Type

Type		Number
I	Regular, with support services	35
II	Modified, with support services	20
III	Special	21
IV	Work Experience	22

Program Environment

Type		Number
I	SMSA, within Central City	41
II	SMSA, outside Central City	16
III	Urban (pop.> 10,000)	20
IV	Rural (pop.≤ 10,000)	21

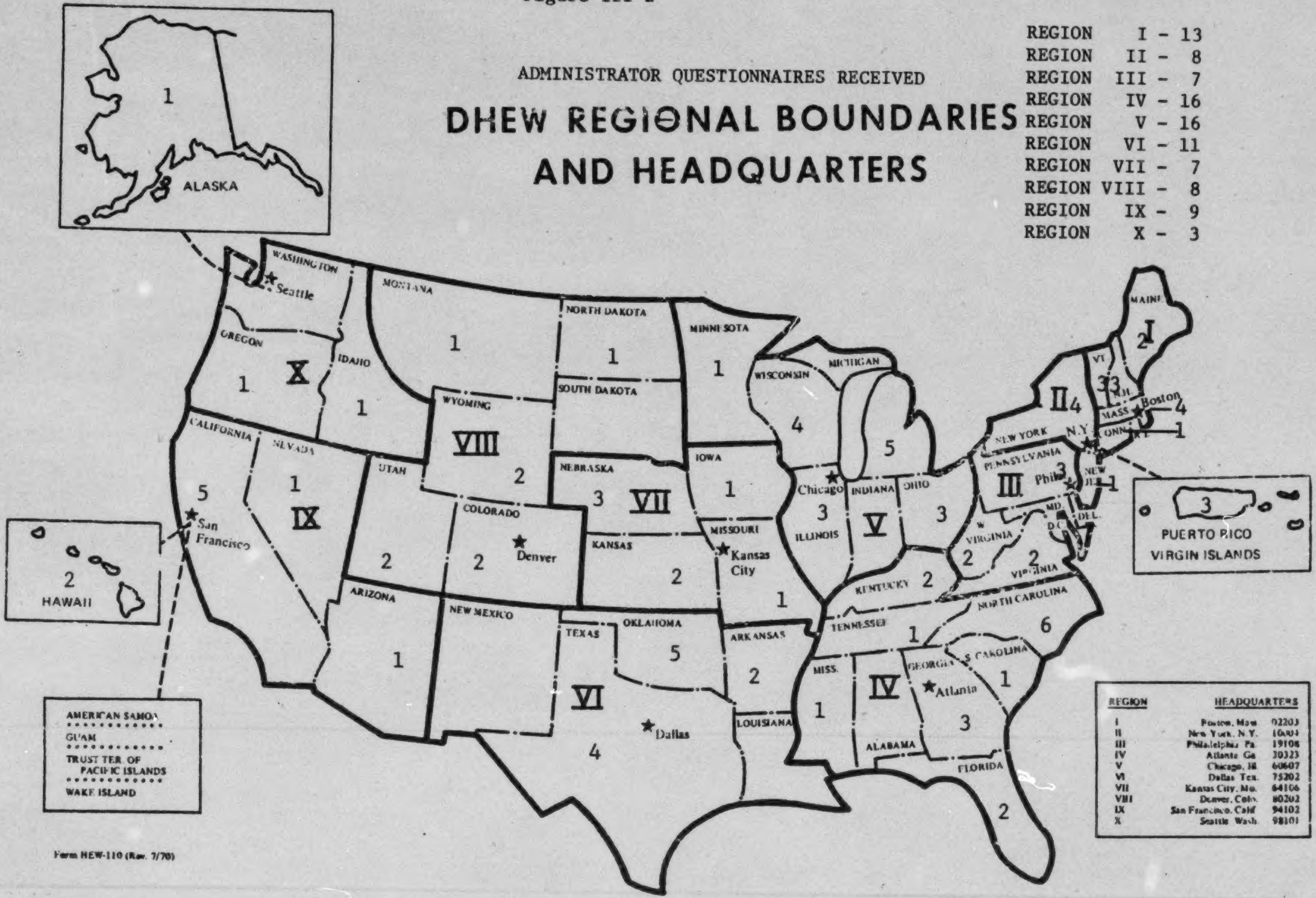
[10/] U.S. Department of Health, Education and Welfare, Office of Education, Vocational and Technical Education Selected Statistical Tables: Fiscal Year 1974. Washington, D.C.: Bureau of Occupational and Adult Education; June 1975.

Figure III-2

ADMINISTRATOR QUESTIONNAIRES RECEIVED

DHEW REGIONAL BOUNDARIES AND HEADQUARTERS

REGION I	13
REGION II	8
REGION III	7
REGION IV	16
REGION V	16
REGION VI	11
REGION VII	7
REGION VIII	8
REGION IX	9
REGION X	3


ALASKA
1
WASHINGTON
Seattle
OREGON
1
X
IDAHO
1
MONTANA
1
NORTH DAKOTA
1
SOUTH DAKOTA
MINNESOTA
1
WISCONSIN
4
MICHIGAN
5
WYOMING
VIII
2
CALIFORNIA
5
San Francisco
NEVADA
1
IX
UTAH
2
COLORADO
Denver
2
NEBRASKA
3
VII
IOWA
1
KANSAS
2
MISSOURI
Kansas City
1
Chicago
ILLINOIS
3
INDIANA
V
OHIO
3
KENTUCKY
2
TENNESSEE
1
ARIZONA
1
NEW MEXICO
TEXAS
OKLAHOMA
5
VI
Dallas
4
ARKANSAS
2
LOUISIANA
MISS.
1
IV
ALABAMA
GEORGIA
Atlanta
3
S. CAROLINA
1
NORTH CAROLINA
6
FLORIDA
2
W. VIRGINIA
2
VIRGINIA
2
MD.
D.C.
DEL.
PENNSYLVANIA
III
Phila.
3
NEW JER.
1
NEW YORK
N.Y.
II
4
MAINE
I
2
VT.
3
N.H.
3
MASS.
Boston
4
CONN.
R.I.
1
2
HAWAII
AMERICAN SAMOA
GUAM
TRUST TER. OF PACIFIC ISLANDS
WAKE ISLAND
PUERTO RICO
VIRGIN ISLANDS
3
Form HEW-110 (Rev. 7/70)

REGION	HEADQUARTERS	
I	Boston, Mass	02203
II	New York, N.Y.	10007
III	Philadelphia Pa.	19108
IV	Atlanta Ga	30323
V	Chicago, Ill	60607
VI	Dallas Tex.	75202
VII	Kansas City, Mo.	64106
VIII	Denver, Colo.	80202
IX	San Francisco, Calif	94102
X	Seattle Wash.	98101

Fig. III-3, Fig. III-4, Fig. III-5 and Fig. III-6 indicate those program administrators who responded by completing the questionnaire, grouped by state and by program type. Fig. III-7, Fig. III-8, Fig. III-9 and Fig. III-10 illustrate questionnaire returns by types of environments by States represented. Each of these programs met the aforementioned criteria of focusing on secondary education, being in at least the second year of operation, emphasizing the training of disadvantaged students for gainful employment or continuing education through training available primarily through regular vocational education classes.

Conceptual Framework

The conceptual framework involved the design of a system to accept data on all identifiable and measurable program elements such as counseling, tutoring, individualization of instruction, classroom space, and equipment for remedial instruction in vocational education programs at the classroom level which serve disadvantaged vocational education students. Conceptually, vocational education programs were viewed in the perspective of an Input-Process- Output model similar to that developed by Stromsdorfer in a report by the National Planning Association.[11/] A particular emphasis for needs assessment is the input side of this model with special attention given to the identification of types of resources, quantification of resources and patterns of resource utilization that facilitate transmission of vocational education skills to vocational education disadvantaged students.

The Input-Process-Output model, as adapted for use in the Assessment of Needs Project is illustrated in Fig. III-11, Program Assessment Model. The examples included under each of the three processes are representative of the type of data that was subsumed under that particular heading. For example, under Outcomes, information was collected on measures such as dropout

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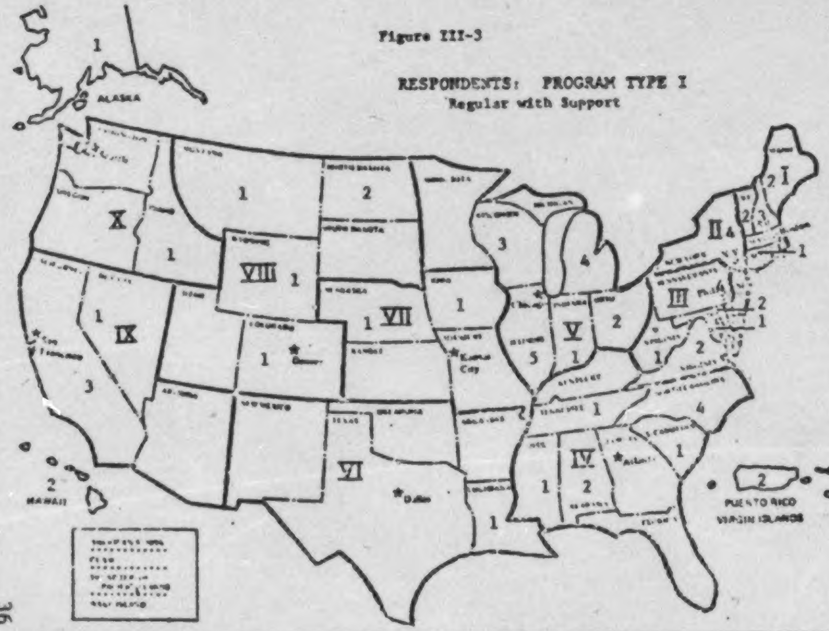
[11/] Policy Issues and Analytical Problems in Evaluating Vocational Education, National Planning Association, Washington, D.C., October 1972. Final Report of U.S. Department of Health, Education and Welfare Project No. 8-0643. Of particular relevance is Part II, Appendix A, "The Methodology of Cost-Effectiveness Analysis and a Critique of the Methodology of Major Studies with Illustrations," pp. 12-33.

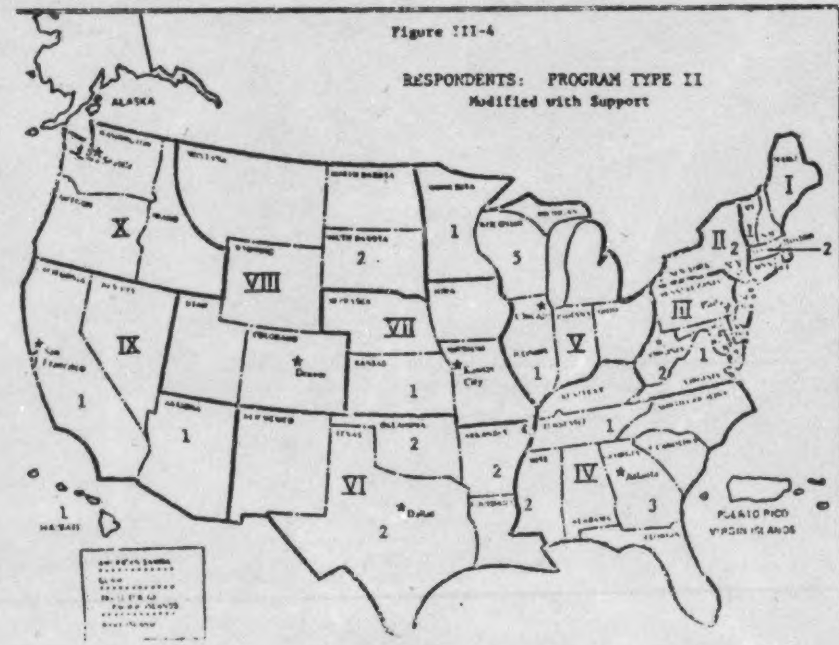
Figure III-3



RESPONDENTS: PROGRAM TYPE I
Regular with Support

ALASKA
HAWAII
PUERTO RICO
VIRGIN ISLANDS
I
II
III
IV
V
VI
VII
VIII
IX
X

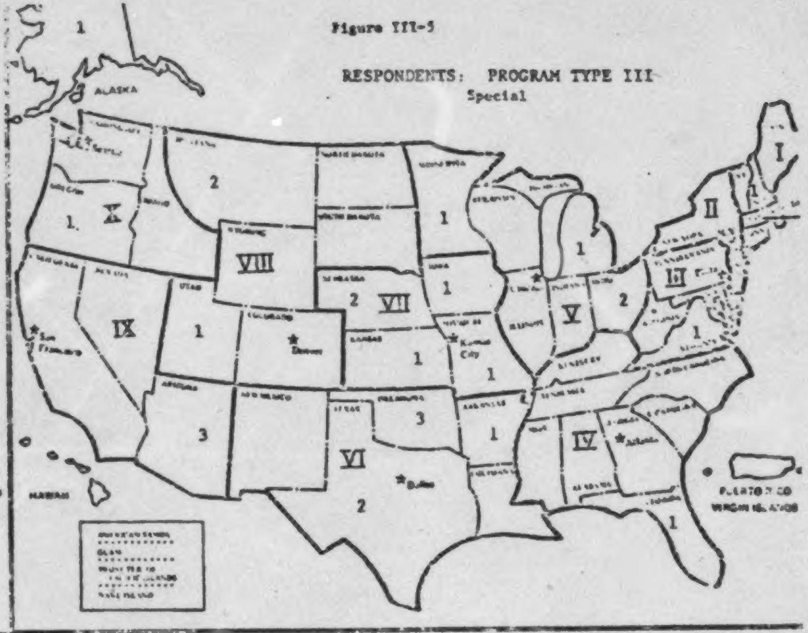
Figure III-4



RESPONDENTS: PROGRAM TYPE II
Modified with Support

ALASKA
HAWAII
PUERTO RICO
VIRGIN ISLANDS
I
II
III
IV
V
VI
VII
VIII
IX
X

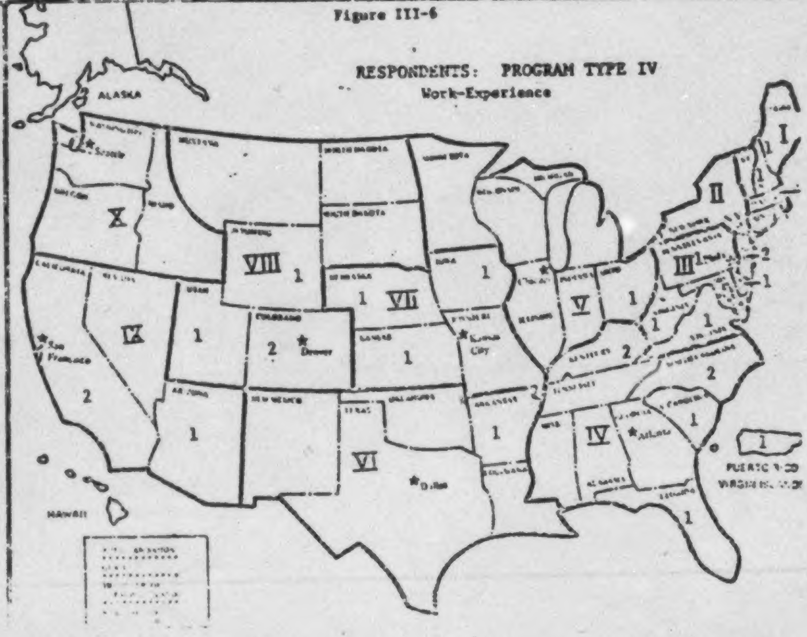
Figure III-5



RESPONDENTS: PROGRAM TYPE III
Special

ALASKA
HAWAII
PUERTO RICO
VIRGIN ISLANDS
I
II
III
IV
V
VI
VII
VIII
IX
X

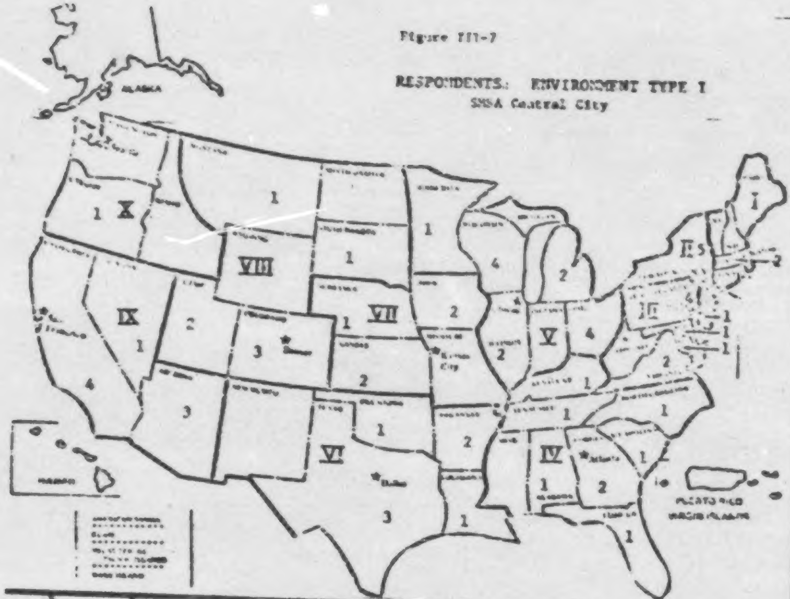
Figure III-6



RESPONDENTS: PROGRAM TYPE IV
Work-Experience

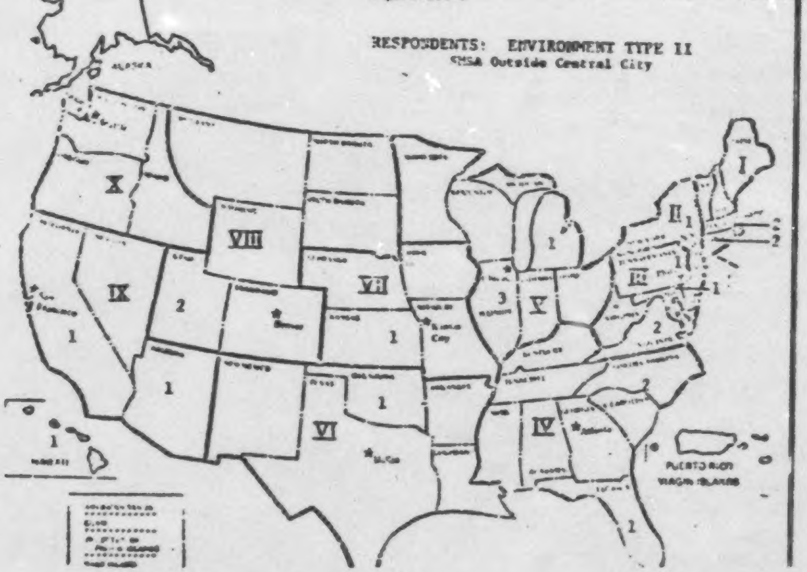
ALASKA
HAWAII
PUERTO RICO
VIRGIN ISLANDS
I
II
III
IV
V
VI
VII
VIII
IX
X

Figure III-7


ALASKA
I
II
III
IV
V
VI
VII
VIII
IX
X
Denver
Kansas City
Atlanta
Dallas
PUERTO RICO
VIRGIN ISLANDS
HAWAII

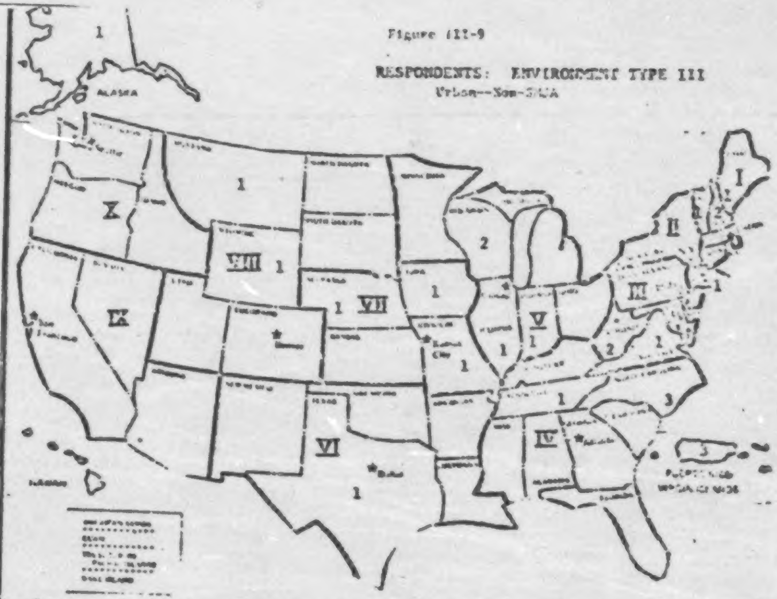
RESPONDENTS: ENVIRONMENT TYPE I
SMSA Central City

Figure III-8


ALASKA
I
II
III
IV
V
VI
VII
VIII
IX
X
San Francisco
Denver
Kansas City
Atlanta
Dallas
PUERTO RICO
VIRGIN ISLANDS
HAWAII

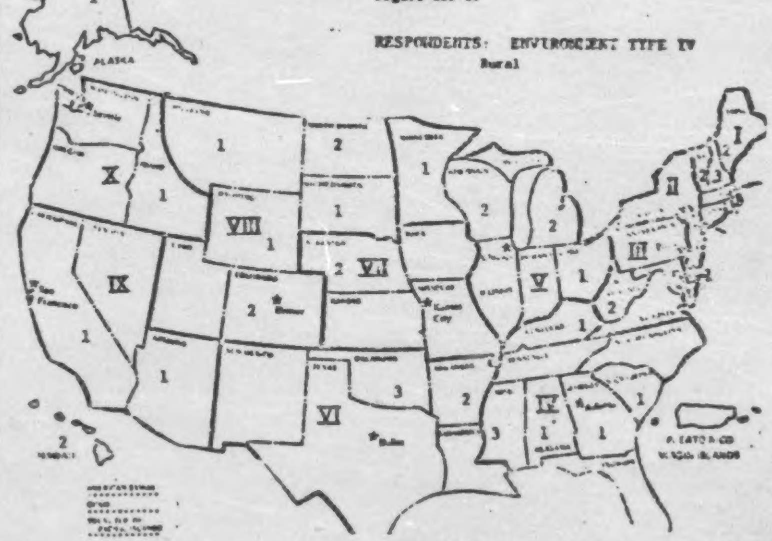
RESPONDENTS: ENVIRONMENT TYPE II
SMSA Outside Central City

Figure III-9


ALASKA
I
II
III
IV
V
VI
VII
VIII
IX
X
San Francisco
Denver
Kansas City
Atlanta
Dallas
PUERTO RICO
VIRGIN ISLANDS
HAWAII

RESPONDENTS: ENVIRONMENT TYPE III
Urban--Non-SMSA

Figure III-10


ALASKA
I
II
III
IV
V
VI
VII
VIII
IX
X
San Francisco
Denver
Kansas City
Atlanta
Dallas
PUERTO RICO
VIRGIN ISLANDS
HAWAII

RESPONDENTS: ENVIRONMENT TYPE IV
Rural

Fig. III-11

Program Assessment Model *

INPUTS	VOCATIONAL EDUCATION PROCESS	OUTCOMES
Program elments: 1. Enrollment 2. Expenditure per pupil a. curriculum b. counseling c. equipment 3. Personnel a. type of job b. experience	Interaction of Program Elements: 1. Teacher/Student Relationships 2. Student/Curriculum Relationships 3. ...... 4.	1. Completions 2. Placements 3. ..... 4. .....

*Note: The examples listed in this Model are only examples of elements, processes, and criteria. Please refer to the text for a more complete listing.

rate, percentage of program completions and percentage of vocational education disadvantaged students who were placed. Such information indicates the level of success for a given program and is the tangible aspect of input and process variables.

The literature review, seminar activities, and interaction with practitioners in the field were particularly useful in developing the input elements for use in the model. The input framework was based on the National Center for Educational Statistics' Standard Terminology for Curriculum and Instruction in Local and State School Systems [12] with modifications registered through collasping and grouping elements by function, and by the addition of elements as suggested by practitioners. All elements were grouped into eight components or categories of expenditure. The categories and respective elements within each are included in Fig. III-12. Other types of critical input information include information on the population served in terms of effect of disadvantagement; sex, race and ethnicity; personnel with responsibilities for the special needs population; and special program arrangements or agreements.

The output conceptualization of the Input-Process-Output model is critical for determining paths of resource utilization. Among the output criteria for success considered applicable to the Assessment of Needs study were the following:

1. Recruitment - program has demonstrated ability to recruit Disadvantaged and Handicapped students into the Vocational Education Program. Indicator: Percent of students enrolled/percent students eligible.
2. Retention - program is able to maintain Disadvantaged and Handicapped students once they have enrolled. Indicator: decreased dropout rate for these Disadvantaged and Handicapped students in Vocational Education compared with Disadvantaged and Handicapped in non Vocational Education programs, general or academic.
3. Within program success, i.e., students achieve academically at a satisfactory level, develop appropriate work related adaptive social skills and behaviors, develop positive self concept, increase awareness of various career areas, develop job specific vocational knowledge and work skills. Indicators: achievement test scores, personality inventories, teacher ratings, and so on.

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[12] U.S. Department of Health, Education and Welfare. Standard Terminology for Curriculum and Instruction in Local and State School System, Washington, D.C.: U.S. Government Printing Office, 1970.

Fig. III-12

Input Components and Elements

Component I: Program Support Services

Guidance & Counseling
Job Placement Coordinator
Work-Experience Coordinator
Diagnost. & Evalu.
Admin. & Cleric.
Parents/Family Counseling
Staff travel
Trans. Services for students
Home/School Coordinator
Psychological Testing
Tutoring Services
Student aid
Health Services
Consultant Services
Food Services
Readers
Interpreters
Other

Component II: Instructional Materials, Supplies, Equipment, and Related Services

Tools and equipment
A-V materials
Remedial Materials
Individualized Inst. Modules
Maintenance & Repair
Routine Classroom Materials
Printed Materials
Electronic Aids
Raw Materials
Task Analysis of Occup.
Field trips
Furniture & Furnishing
Teaching Games/Working Models
Minority Culture Oriented Materials
Contractual Services
Bilingual Texts
Other

Component III: Instructional Personnel

Reg. Voc. Ed. Inst. Staff
Reg. Inst. Staff
Remedial Reading Spec.
Remedial Math Spec.
Curriculum Spec.
Teacher Aides
Media Spec.
Bilingual Spec.
Other

Component IV: Instructional Related Needs

ID of Students
Release Time for Planning
Release Time for Student Conferences
Teacher Clerical Support
Additional Period of Employment
Sub. Teacher Pay
Petty Cash Fund
Monetary Reward System for Students

Component V: Staff Development

Teacher In-Service
Administrator In-Service
Needs Assessment
Attendance at Professional Meetings
Visitation at Other Programs
Other

Component VI: Community PR

Commun/Indu. Committee
Interagency Coord.
Comm/Ind. Visitation
Comm/Ind. Referral
Labor Union Liaison
Info. Dissem. Office
Advertising Budget
Other

Component VII: Administration & Supervision

Program Planning & Development
Program Administration
Program Evaluation & Research
Staff Supervision
Advisory Committee
Follow-up Surveys
Accessing Community Resources
Comm/Emp. Surveys
Other Community PR
Statistical Services

Component VIII: Facilities

Shop/Lab Space
Classroom Space
Facilities Maintenance
Office Space
Learning Lab
Curriculum Lab
Model Environments
Other

4. Program Completions - number of students completing program satisfactorily. Indicator: Percent of completions/number starting, e.g., if one year program, determine how many satisfactorily complete program and compare with number who started or joined program in progress. This should also include early progress leavers (not dropouts) who do not complete the program, but leave the program prior to completion in order to begin work. Consideration should be made as to whether the students move into occupations related or unrelated to their training.

5. Placements - percent of students completing program who are:

   a) placed in an occupation related to their training;
   b) placed in an occupation unrelated to their training;
   c) continuing their education through post secondary vocational education programs, or higher education;
   d) continuing their training through vocational rehabilitation or manpower programs; or
   e) placed in a sheltered employment situation.

   Any of the above situations should obtain within three months following the student's completion of the program.

6. Follow-up - this should be done at various time intervals (e.g., 6 months, 12 months, 24 months) following placement or enrollment in continued training to determine:

   a) job or school satisfaction,
   b) job or school retention,
   c) job changing and advantages/disadvantages related thereto,
   d) further success in education or training programs, and
   e) monetary gain or loss.

The process stage of the Input-Process-Output model was not directly addressed within the research study. Instead, process variables, e.g., instruction, were partitioned into instructional elements such as supplies, preparation time, classroom space, individualized instruction materials, etc., to make them operational as program inputs.

DATA COLLECTION METHODOLOGY

Instrument Design

During the course of the project data were gathered on a series of different program input and output areas including:

1. Characteristics of the student served;
2. Characteristics of staff (administration and faculty) working within the program;
3. Program elements by rank, type, and level of resources;
4. Enrollment and outcome information;
5. Estimates of unmet needs; and,
6. Relevant environmental variables.

Data sources included program administrators, teachers, other vocational education officials, census/economic data and relevant reports on programs and/or the geographic area it serves.

Two instruments were designed for use in data collection activities. The more extensive instrument, the Program Administrator Questionnaire (PAQ), was mailed to each of the 158 selected programs one week after each administrator had received a letter inviting that administrator to participate in the needs assessment and advising him of the goals of the research project and the data collection expectations pursuant to participation. Two weeks after the questionnaire mailing, follow-up phone calls were placed to each program administrator to clarify/answer any questions he/she had about the project or about the data requirements necessary for completion of the Program Administrator Questionnaire (PAQ). Additionally, the phone call permitted the completion of a portion of the questionnaire during the conversation, thus ensuring an understanding of the questionnaire and serving to motivate the administrator to continue his efforts on behalf of the needs assessment. Further, each correspondence with the local administrator indicated that collect phone calls would be accepted for purposes of clarifying questions the participant had relative to the assessment of needs survey. A second series of phone calls was initiated two weeks before the due date for questionnaire returns to answer any additional questions that the local administrator might have and/or to prompt the local administrator to complete his data generation effort.

The survey was conducted in the spring and summer of 1975, from late April through July. A number of the information requests involved data for the 1974-75 school year; in some cases, respondents provided estimates or projections of costs and outcome measures based on experience in the 1973-74 school year. Utilizing the introductory letters and follow-up phone calls, a response rate of 62% was achieved for the administrator questionnaire.

The Program Administrator Questionnaire package, which is included as Appendix D in the final technical report, necessarily involved several hours of the local administrator's time in order to collect specific information relative to program outcomes and program inputs in terms of the importance of various elements, the costs of various elements, and the anticipated extra cost needed to improve program success. Additionally, the Program Administrator Questionnaire specifically requested estimates of the number of vocational education disadvantaged students who were in school and eligible to be served but were not presently receiving services designed to assist vocational education disadvantaged students to succeed. Additionally, administrators were asked to estimate the number of students of the appropriate age range who were not in school and not being served. Each local program administrator was asked to estimate the total cost per student of serving these two populations in order to devise some estimates, understandably crude, of population and resource needs.

A companion instrument, the Teacher Guided Interview Questionnaire(T.Q.) was constructed to gather similar information from teachers in terms of programmatic and personal needs necessary to improve program success. The teacher guided interview was administered during site visits to a number of outstanding selected programs. The site visit data gathering exercise consisted of two-three day visits and included such activities as interviewing the local program administrator relative to the data that he had supplied through the PAQ, visitation of facilities and programs and comprehensive discussions with the teachers. A portion of the discussion with teachers was the administration of the Guided Teacher Interview Questionnaire which is included in the Final Technical Report as Appendix E. This interview was designed to gather estimates-of-need information about each individual teacher and for the entire program. Additionally, each teacher was asked to indicate the relative importance of each of the possible program elements.

Field Test

Each of the above instruments was field tested in a pilot test administered within the State of North Carolina. The Program Administrator Questionnaire was mailed to eight local school districts that received Part B Vocational Education Disadvantaged Funds. These eight program administrators responded to the questionnaire in a fashion not unlike the program administrators nationwide. The results are included as Appendix F in the final technical report, Field Test Reports. It should be noted that in the course of field testing the instruments an evaluation instrument was designed to accompany both the PAQ and TQ. The results of the evaluation of the PAQ were used to revise, update and make more concise the particular types of information requested from the administrator. Further the field test resulted in the format of the PAQ being revised such that the task was made more concise and the directions were clarified by grouping similar information requested in categories of similar focus. This revision simplified the requirements of the respondent by permitting the questionnaire to be circulated within a central office staff to various administrators with differing information bases.

The Teacher Guided Interview Questionnaire was also field tested in North Carolina at two sites, during the eighth and ninth project months. Like the PAQ, the TQ also included an instrument evaluation section. Again, this data was used to revise the guided interview questionnaire before use with the national sample. Among the revisions generated by the field test were the following:

1. A new format;
2. The insertion of information about the entire program for teachers to use in generating estimates of need;
3. A reduced focus on students within the program and increased focus on a particular teacher's own situation;
4. A discussion of the teacher's individual needs, as distinct from programmatic needs; and,
5. Overall reduction in length from two hours to 60 minutes of administration time.

Site Visits

Project staff conducted a series of site visits relative to the performance of three tasks specified in the analysis methodology. The first task, construction of the Program Administrator Questionnaire, was facilitated by site visits to seven programs to research the kinds of information available from local directors, the major needs and concerns of local directors and faculty, and the appropriate protocols involved with conducting a site visit. A second series of visits was conducted in conjunction with the field test of the Program Administrator and Teacher Questionnaires. These visits resulted in revisions of the initial instruments prior to conducting the national survey. The third and most extensive series of site visits was conducted to administer the Teacher Guided Interview Questionnaire and to confirm programmatic information provided by the local administrator. This third series of visits was conducted at 7 sites located primarily in regions IV, V, and IX, and culminated in the collection of 91 Teacher Guided Interview Questionnaires as well as in-depth information from the administrators of those particular programs.

DATA ANALYSIS PLAN

The analysis plan for treatment of the data collected via the survey questionnaires provided for two levels of data analysis. First, descriptive statistics (primarily means) would be calculated for all input and outcome variables. Second, several multivariate analyses would be conducted on selected sets of the input and outcome variables.

Analysis of the data would involve use of a packaged, computer assisted, statistical program for the generation of descriptive statistics as well as the more extensive multivariate analyses. [13] The SPSS subprograms to be used in data analysis included subprograms CONDESCRIPTIVE, FREQUENCIES, CROSSTABS, REGRESSION, DISCRIMINANT, and CANCORR.

Descriptive statistics (means and number of valid cases) were to be calculated for the major input and outcome variables for all the survey programs, by program type, and by program environment. The descriptive treatment of the data would result in the following descriptive information for the program input variables;

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[13] Nie, Norman H., C. Hadlai Hull, Jean G. Jenkins, Karin Steinberenner, and Dale H. Bent. SPSS: Statistical Package for the Social Sciences, 2nd Edition. New York: McGraw Hill Book Company, 1975.

1. enrollment by primary disadvantaged effect category for all programs by program type, and by program environment (statistics: means and number of valid cases).
2. enrollment by sex and race and/or ethnicity for all programs, by program type, and by program environment (statistics: means and number of valid cases).
3. average per pupil vocational education expenditure for regular and disadvantaged vocational education students for all programs, by program type, and by program environment (statistics: means and number of valid cases).
4. administrator priority rankings of program components and elements, for all programs, by program type, and by program environment (statistics: means and number of valid cases).
5. in-service training needs identified by program administrators (statistics: frequencies).
6. vocational education staff priority rankings of program elements (statistics: mean rankings).

The descriptive treatment of the data would result in the following descriptive information for the program outcome variables:

> For each of the five outcome measures (including completion to enrollment ratio, dropout rate, reclassification rate, placement rate, and follow-up rate) for all programs, by program type and by program environment for regular and disadvantaged education students (statistics: means and number of valid cases).

The second level of data analysis would involve the application of a series of multivariate analysis techniques to explore the relationship between specific types and levels of program resources and program outcome measures.

These multivariate analyses would be conducted utilizing per student component costs and/or per student element costs as one set of variables, and the five outcome measures (completion to enrollment ratio, dropout rate, reclassification rate, placement rate, and followup rate) as a second set of variables. The multivariate analyses would include:

1. a canonical correlation analysis, relating input and outcome variables to determine the overall relationship.

2. discriminant analyses utilizing program inputs (component costs per student and element costs per student) as discriminating variables and relating these to program groups, created on the basis of outcome measures. For this particular analysis, the five outcome measures would be collasped into a single composite score with the programs categorized into groups prior to analysis on the basis of this composite score.

3. multiple regression analyses relating the five outcome measures with the input variables of cost per student by element and cost per student by component. This analysis would involve, in the first instance, two sets of variables: five outcome and seventy-eight input; and, in the second instance, two sets of variables: five outcome measures and eight input variables.

The data analysis plan would provide descriptive statistics of the survey programs on the basis of selected input and outcome variables, and more extensive analytic information about the relationships, across surveyed programs, between program inputs and program outcomes. The results of these analyses might suggest (or uncover) similarities/differences in resource utilization patterns among the survey programs.

IV. RESULTS

One of the major research goals of the study was to "estimate needs for current programs to achieve demonstrated effectiveness levels (eliminate dropouts and expected failures, enroll those wishing to be served, etc.)". Several research objectives were generated to focus activity on the accomplishment of this research goal including the following:

1. Quantify the professional, para-professional and other personnel, equipment, supplies and resources employed or consumed in vocational education disadvantaged programs which have been selected as successful, effective programs.
2. Analyze these selected programs in consultation and coordination with appropriate vocational education administrative personnel, stressing classroom and educator evaluations and derive patterns of resource use characteristic of success.
3. Develop procedures for applying effective resource use patterns to estimate the requirements of personnel, equipment, supplies, and other elements for the successful vocational education of disadvantaged students.

These three research objectives were addressed by means of a comprehensive Program Administrator Questionnaire which was mailed to the selected 158 most successful vocational education programs serving vocational education disadvantaged students. The data collection focus of the questionnaire centered on accessing input and outcome information, particularly information related to enrollments, costs and measures of program success (i.e., student completion of program, placement, reduced dropout rates, etc.).

It had been anticipated that local programs would have comprehensive information on enrollments, costs, and outcome measures because of increasingly stringent accounting and reporting procedures initiated by State and federal governments. However, the survey results indicated that local data collection procedures vary considerably between and within states in terms of degree, type, breadth and depth of information collected. Other studies of vocational education for special needs populations have encountered similar difficulties.[14/]

Taken collectively the 98 questionnaire respondents provided the most comprehensive information on enrollment data, with 95% of the respondents having provided complete information on enrollment data by primary effect categories and by sex and race/ethnicity. Less complete but usable information was provided on program costs and expenditures, particularly within the component areas dealing with salaries. Eighty-seven percent of the respondents supplied at least partial information on component and per pupil costs. The least comprehensive information was provided on program outcomes. While 79% of the respondents provided some data on program outcomes, the data was sketchy, usually lacked at least one of the five requested measures, and often lacked two or three measures.

While data problems did limit a portion of the proposed statistical analysis, the research emphasis nevertheless did complement the data which was collected. For example, input and outcome data was available to address the goal of estimating needs for demonstrated effectiveness levels, particularly as these needs affected differing patterns of resource utilization. Especially critical to this effort of analyzing patterns of resource utilization was the research emphasis placed on programmatic inputs rather than program outcomes. Therefore, the research activity focused primarily on quantification of types and levels of resources and how these resources were mixed/combined in the transmission of vocational education skills to the disadvantaged.

The research emphasis, which focused on assessment of need rather than on evaluation also complemented the data collection activities. Program outcomes were not measured against some model of an ideal program; rather, the effort

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[14/] See, for example, An Assessment of Vocational Education Programs for the Handicapped Under Part B of the 1968 Amendments to the Vocational Education Acts: Final Report. The Olympus Research Corporation (Salt Lake City, Utah: October 30, 1975).

was directed at describing a series of effective patterns of resource utilization to determine what levels of resources were needed and which combinations of resources might be most effective within the particular setting of the respondent's program.

Enrollment data, when manipulated through descriptive statistical operations rendered a delineation of the population of vocational education disadvantaged students served by the programs surveyed. Specifically, students were categorized by primary effect categories such as language deficiency or computational deficiency and by sex and race/ethnicity. Further, these two aggregations were subdivided by Program Type and Program Environment to permit scanning for enrollment trends and to enhance the description of the programs.

Importantly, tests of difference were not performed on mean enrollment data by Program Type or Program Environment. Two reasons account for this decision. First, the major objectives of the research project were to identify and describe effective patterns of resource utilization and to generate some crude estimate of resource need at a national level rather than to demonstrate differing rates of effectiveness between types of programs or types of environments. Second, even though the questionnaire returns provided information on programs serving 1% of the total vocational education disadvantaged enrollment, the sample of programs from which data was collected was not statistically representative of all vocational education programs that serve special needs populations. This was intended; other project goals were judged more critical than random selection. Indeed, the primary basis of selection was a condition of high success, a condition that greatly reduced the variance between selected programs in terms of outcomes and expenditures.

DESCRIPTIVE INFORMATION: PROGRAM INPUTS

Enrollment by Primary Effect Categories

Figures IV-1, IV-2, and IV-3 indicate the enrollment data by primary effect categories for vocational education programs for the disadvantaged when grouped according to all programs and by program type and program

FIG. IV-1 AVERAGE PERCENTAGES OF ENROLLMENTS BY PRIMARY EFFECT CATEGORIES FOR VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED (N = 98)

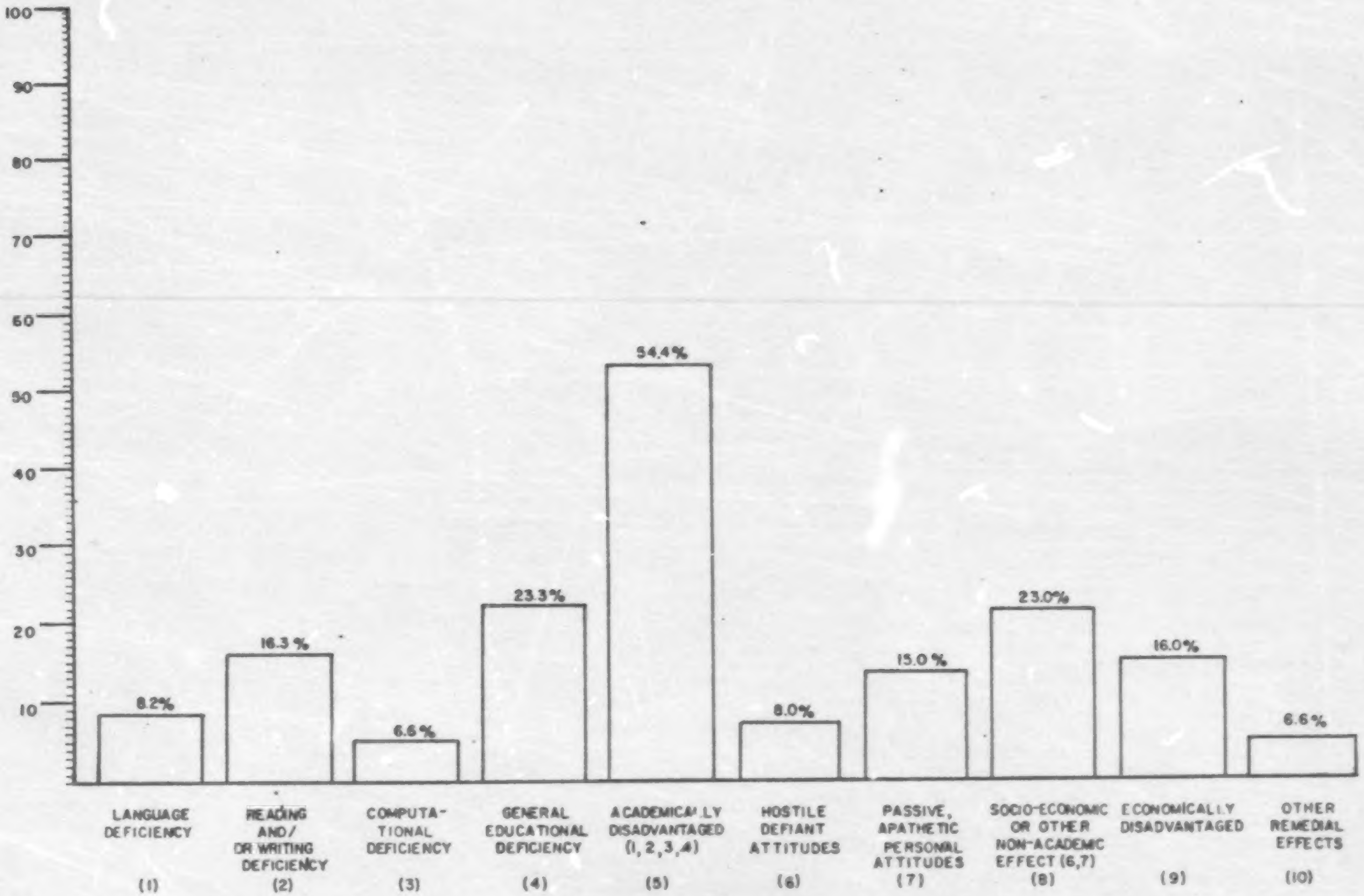


FIG. IV-2 AVERAGE PERCENTAGES OF ENROLLMENTS BY PRIMARY EFFECT CATEGORIES FOR VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED BY PROGRAM TYPE

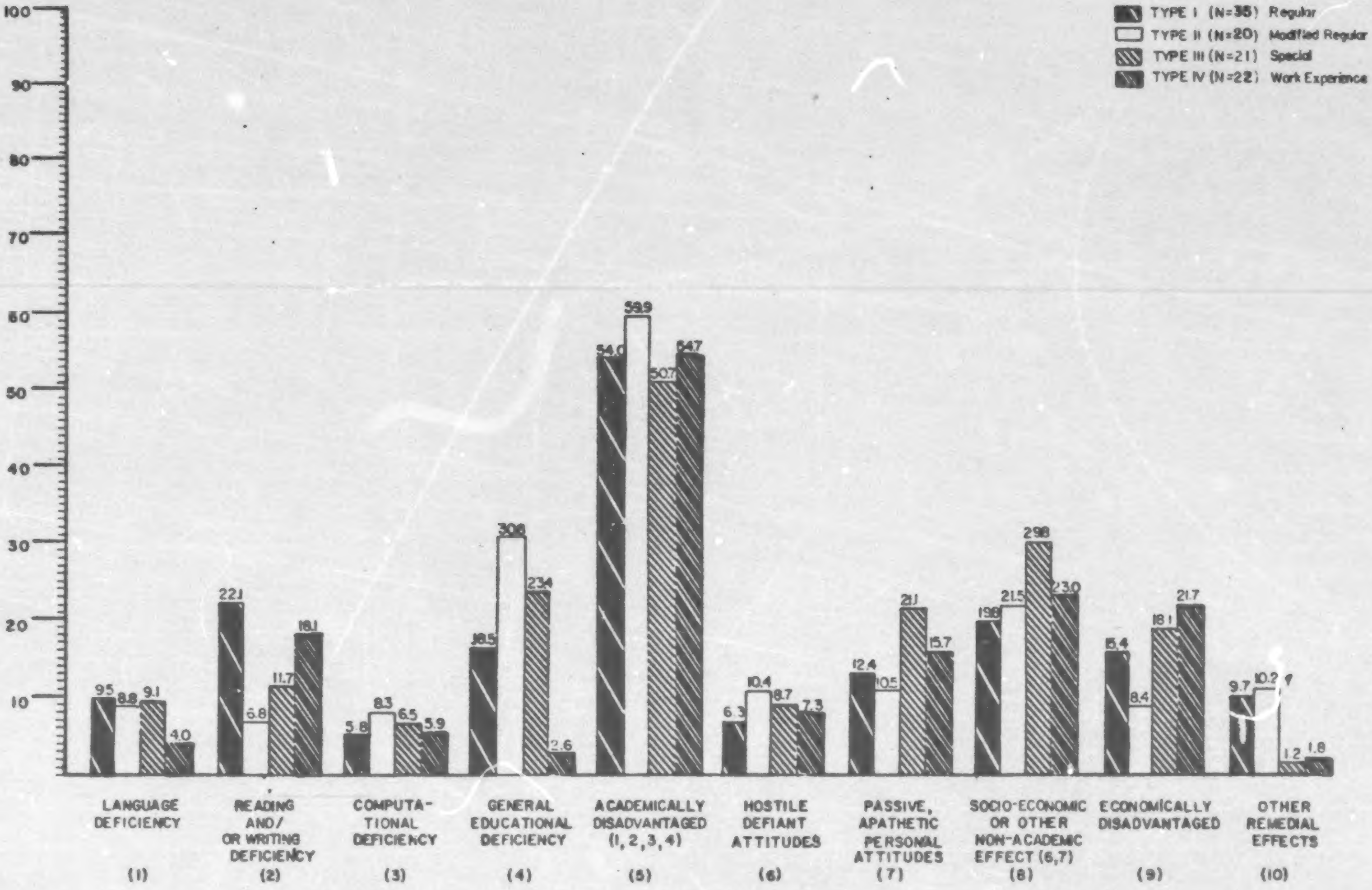
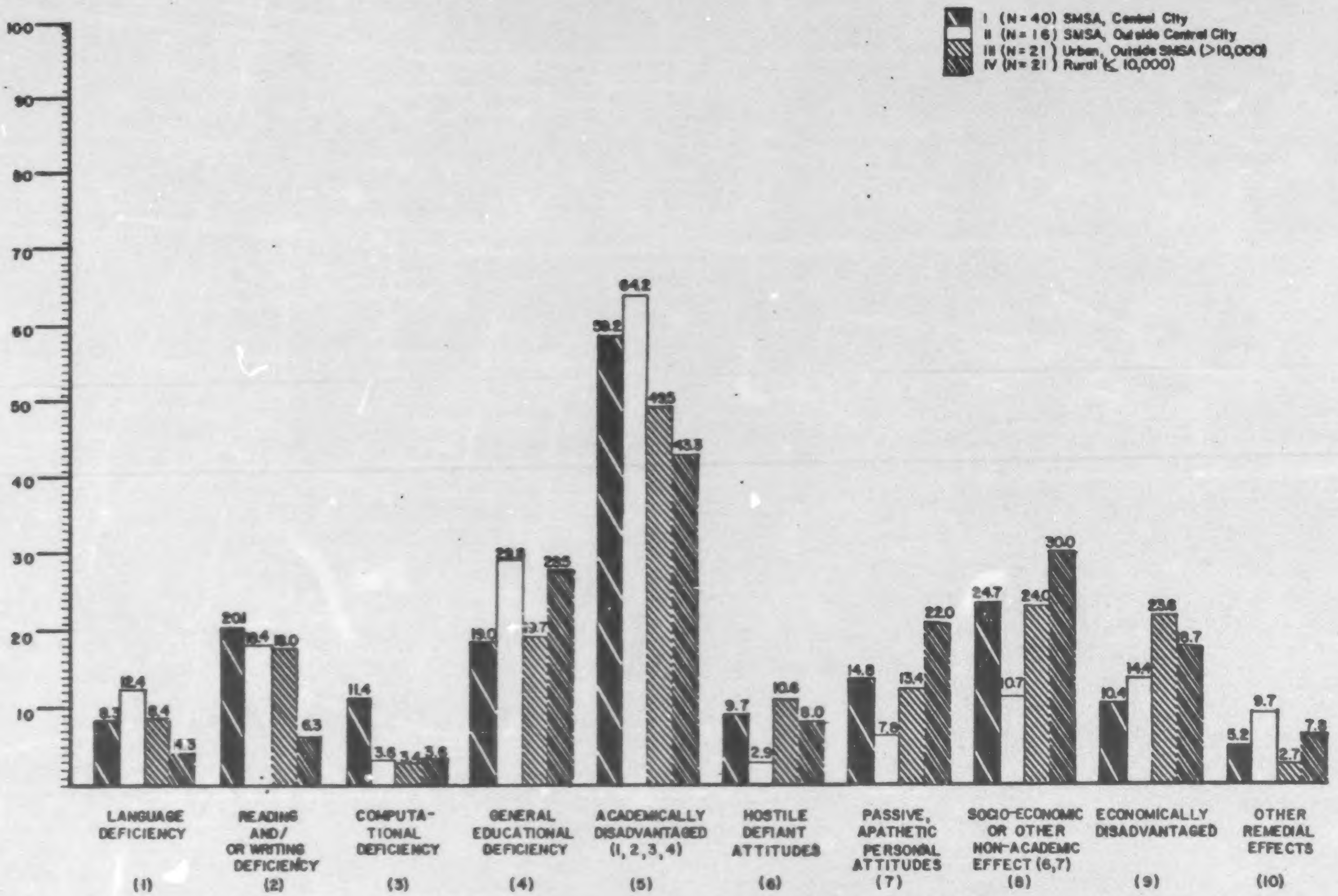


FIG. IV-3 AVERAGE PERCENTAGES OF ENROLLMENTS BY PRIMARY EFFECT CATEGORIES FOR VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED BY PROGRAM ENVIRONMENT



environment. For example, the magnitude of the percentage of academically disadvantaged enrolled students is very large; surprisingly, the highest percentage of academically disadvantaged enrollment by environment was found in the SMSA-Outside Central City environment type rather than in the SMSA-Central City or in the Rural Area. Another unanticipated occurrence was the relative small percentage of economically disadvantaged students when compared to the percentage of disadvantaged students classified by socio-economic/non-academic effects or academic effects.

The subtotals for enrollments by primary effect of disadvantagement potentially provides direction for training emphases in other areas of school. For example, the high percentage of academically disadvantaged students, specifically students with reading and writing deficiencies suggests that remediation of these disadvantagements should be a major emphasis of the schooling effort.

Enrollment Data by Sex and Race/Ethnicity

Enrollment data by sex and race/ethnicity for vocational education programs is presented in Figure IV-4, Figure IV-5, and Figure IV-6. This data suggests that for disadvantaged students, the majority served in the surveyed programs were male and were white. In general, the mean ratios of male to female and white to black were preserved across program types and program environments. The several notable exceptions were the relatively even distribution of males and females in special programs, the relatively large percentage of American Indian students served in special programs, and the relative low overall enrollment of Spanish American students.

Enrollment by environment type reflected general school enrollment patterns. For example, the highest concentration of white students was found in SMSA-Outside Central City programs while blacks were enrolled predominantly in SMSA-Central City programs. Further, only in the Central City programs are there as many females as male enrollees. The opposite extreme were rural programs which were male dominated.

FIG. IV-4

AVERAGE PERCENTAGES OF ENROLLMENTS BY SEX AND RACE/ETHNICITY FOR VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED (N=98)

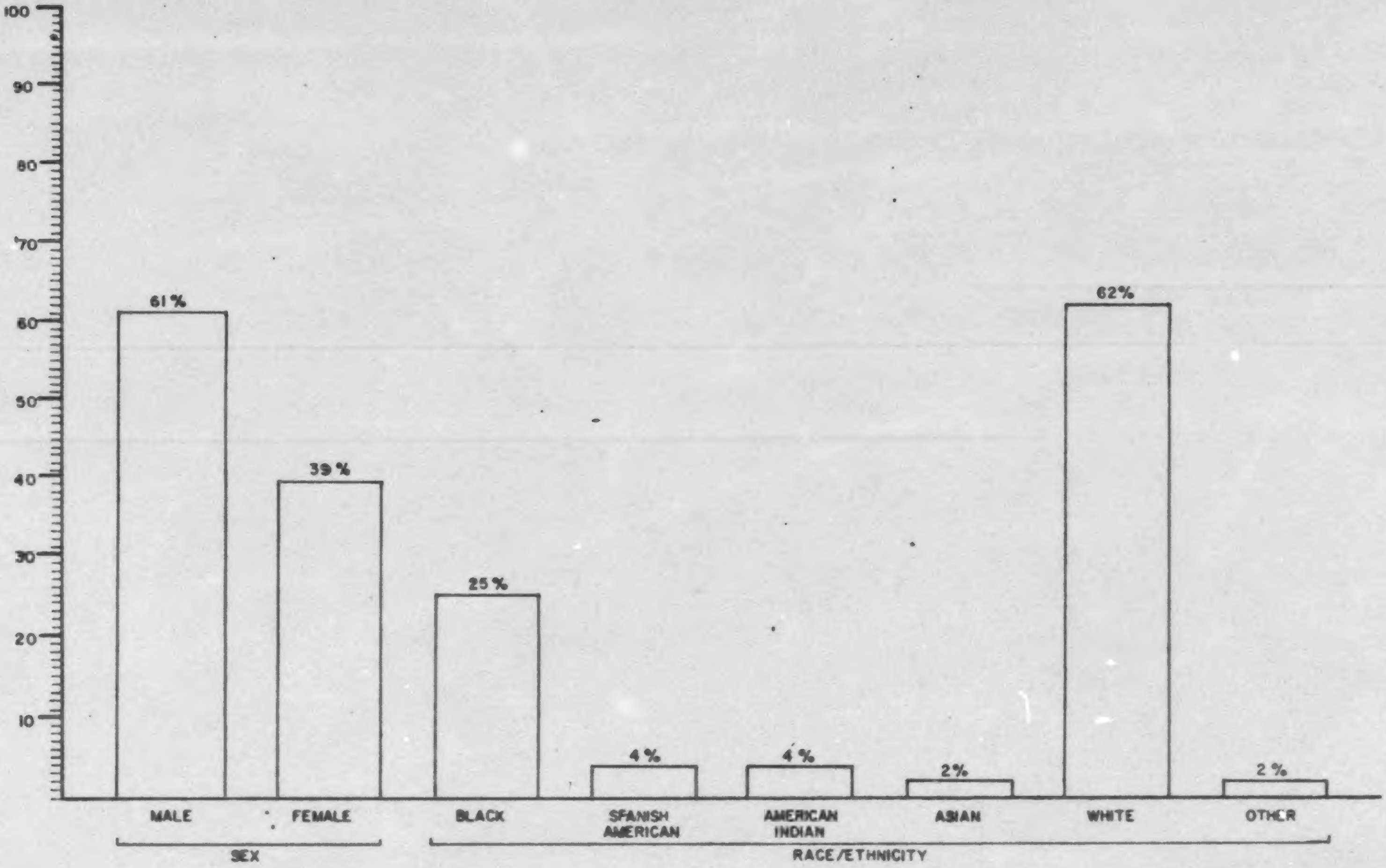


FIG. IV-5 AVERAGE PERCENTAGES OF ENROLLMENTS BY SEX AND RACE/ETHNICITY FOR VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED BY PROGRAM TYPE

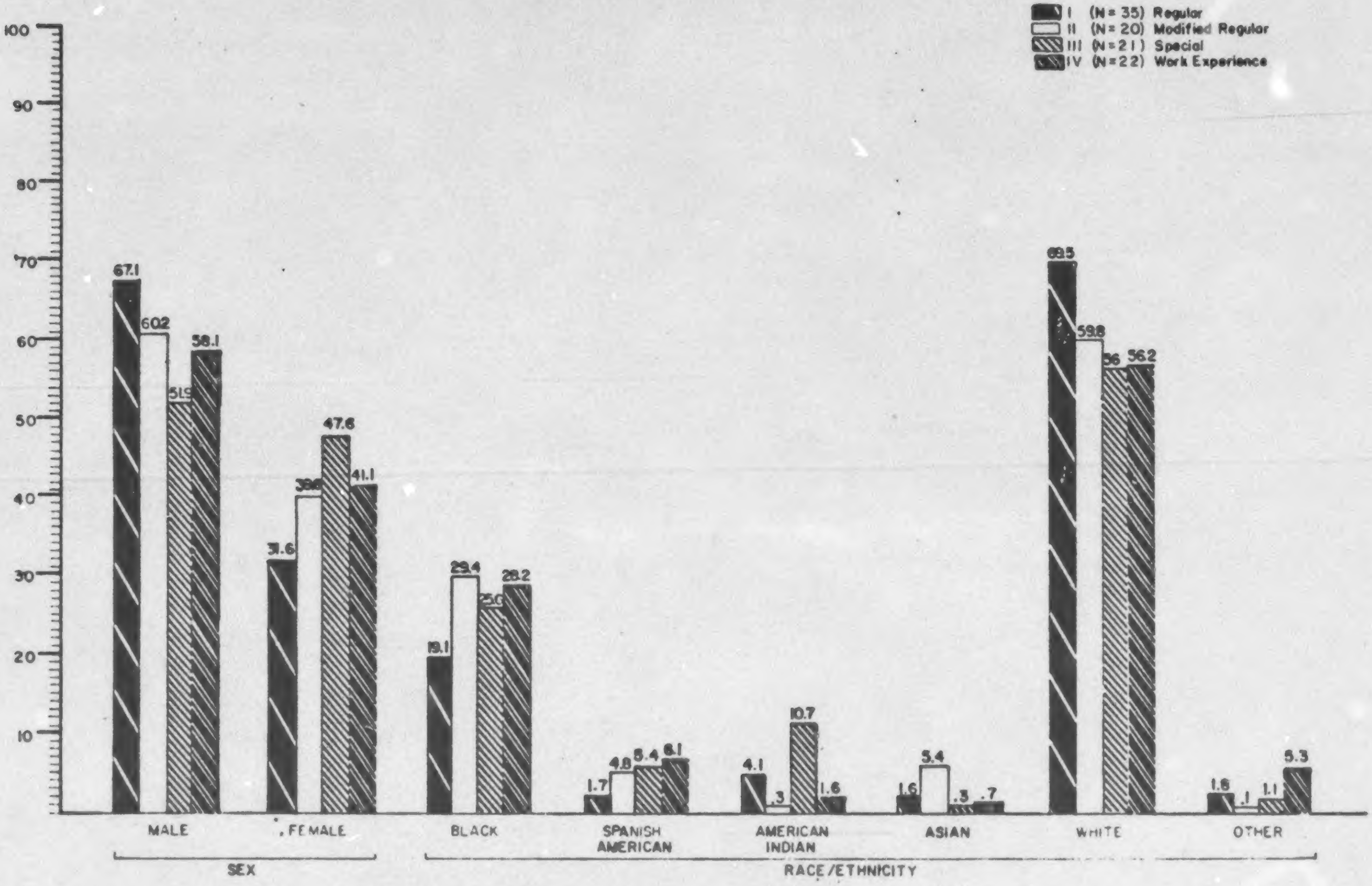


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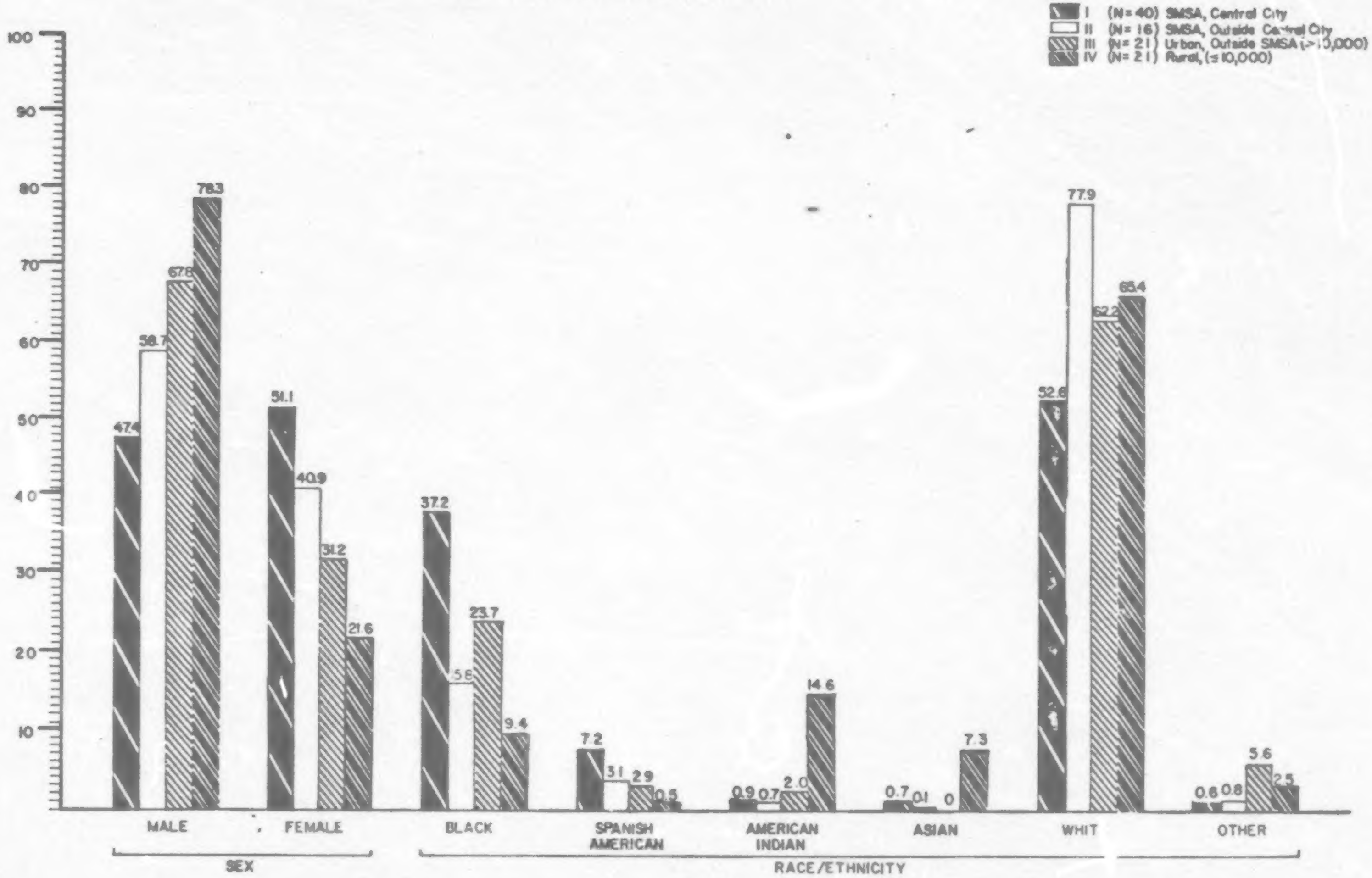
FIG. IV-6 AVERAGE PERCENTAGES OF ENROLLMENTS BY SEX AND RACE/ETHNICITY FOR VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED BY PROGRAM ENVIRONMENT



Vocational Education Expenditures

Cost data was collected on total, component, element and per pupil expenditures for the 1973-1974 School Year and the 1974-1975 School Year. These data were manipulated to produce average per pupil vocational education expenditures for regular and vocational education disadvantaged students for each School Year. The type of expenditure information provided by survey programs might best be understood with reference to a model for cost per pupil for vocational education program expenditures developed by Gasior, Kocinski, and Doty utilizing two programs in New Jersey.[15/]

In this model, vocational education costs per student are divided among four categories as follows:

1. district per pupil costs
2. building level per pupil costs
3. vocational building level per pupil costs
4. program level per pupil costs.

District level expenditures are all expenditures relating equally to all the students in the school district. Building level expenditures are all those expenditures relating equally to all the students in the high school building. Vocational building level expenditures are all those expenditures relating equally to all the students in vocational education. Program level expenditures are all those expenditures relating equally to all those students enrolled in the program. These four costs categories are summed in arriving at the total per pupil costs for vocational education programs. The expenditure information requested of programs involved in this survey was related to vocational education expenditures *per se*, incorporating Gasior, Kocinski, and Doty's cost categories numbers 3 and 4. In addition to these two cost categories, the additional costs for services provided to disadvantaged vocational education students were also included. In summary, the cost information requested via the Program Administrator Questionnaire included the following three cost components:

[15/] Albert E. Gasior, Rose R. Kocinski, and Charles R. Doty. *Model for Cost Per Pupil for Vocational Education Programs and Types of Schools.* Trenton, New Jersey: Rutgers University, June 30, 1975.

1. vocational building level per pupil cost;
2. program level per pupil cost; and
3. the additional building level and/or program level costs directly associated with the special needs services for the disadvantaged population.

This last cost category was not included in the model developed by Gasior, Kocinski, and Doty since the focus of their project was on regular as opposed to special needs vocational education programs. However, this special needs services cost category is essential to the subject of this research project since it provides a measure of the marginal costs associated with those extra services and activities which assist the disadvantaged student to succeed in vocational education.

Further, cost data for these services for students with special needs provides cost estimates that have been addressed, but not previously collected. For example, The National Educational Finance Project collected and presented the school cost per secondary student, the total cost per vocational student, the excess cost per vocational education student and a 1980 estimate of the number of full-time equivalent special needs vocational students. The project did not provide estimates of the additional expense above the excess cost per vocational education student, which is required to serve a special needs student in vocational education. Instead, the Finance Project's authors suggest only that vocational education special needs students spend 17% more of their time in courses with additional costs (i.e., vocational education courses) than do regular vocational education students.[16/]

Of the 98 programs surveyed, 38 provided complete information on vocational education expenditures for the disadvantaged and 24 programs provided complete information on their vocational education expenditures per regular vocational education students. When the term "complete information" is used, this means that expenditure data was provided for all three categories described above. Generally, the reason for the program's provision

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[16/] Roe L. Johns, Kern Alexander, and K. Forbis Jordan. Planning to Finance Education (Washington, D.C.: U.S. Office of Education; 1971), p. 127.

of "incomplete information" was the failure to provide vocational building level per pupil costs and/or incomplete information on program level per pupil cost.

The calculations of average vocational education expenditures per regular and disadvantaged vocational education students are presented in Table IV-1 for all programs providing complete cost information and by program type and program environment. This cost data is presented for School Year 1974-75. As the reader will note, the general pattern shows per student expenditures for the disadvantaged to be higher than per student expenditures for regular vocational education students for all programs and by program types and program environments. These differences may be interpreted as the marginal costs associated with providing services to the disadvantaged in vocational education. Two exceptions should be noted: first, cost per student for regular vocational education students compared with the disadvantaged vocational education students in program type III, Special Programs, is lower. This may be attributable to (1) the difference in the number of cases from which means were derived, and (2) the possibility that special programs for the disadvantaged may actually be conducted at a lower cost per student than regular vocational programs within a given school district. Second, the difference between the costs per disadvantaged student and regular vocational education student in program environment I, SMSA-Central City is the reverse of the general pattern. The cost difference noted here may be attributable to the number of cases from which the average cost figures were derived. Overall, the marginal cost of serving disadvantaged students in vocational education is about 12%.

TABLE IV-1

Average Per Pupil Vocational Education Expenditures As Reported by Survey Programs Providing Total Vocational Education Expenditure Information, FY 1975

	All Program Types	Program Type			
		Regular w/ Support Services	Modified w/ Support Services	Special Program	Work Experience Program
Vocational Education Expenditures Per Regular Vocational Education Student	$1049 (N=24)	$1023 (N=10)	$ 652 (N=5)	$1213 (N=5)	$1404 (N=4)
Vocational Education Expenditures Per Disadvantaged Vocational Education Student	$1181 (N=38)	$1286 (N=12)	$1224 (N=9)	$1010 (N=10)	$1189 (N=7)

	All Program Types	Program Environment			
		SMSA Central City	SMSA, Outside Central City	Urban Non-SMSA	Rural
Vocational Education Expenditures Per Regular Vocational Education Student	$1049 (N=24)	$1394 (N=6)	$1194 (N=6)	$ 805 (N=7)	$ 802 (N=5)
Vocational Education Expenditures Per Disadvantaged Vocational Education Student	$1181 (N=38)	$1261 (N=12)	$1278 (N=9)	$1010 (N=9)	$1143 (N=8)

NOTE: Expenditure information provided is average per pupil expenditures. This average figure was derived from programs that provided complete vocational education expenditure information. The number of programs from which these average figures were derived are shown in parentheses (N=), as indicated above.

Special Program Features

In addition to information on enrollment and costs, data was collected on special features that taken in combination constitute patterns of community resource use for the programs included in the sample. Among the specific data items collected to address this question were information on recruitment procedures, information on strategies and activities undertaken by the program personnel to enlist and maintain community support, and information on the linkages with business, industry and labor unions relative to training and/or placement for the area served by the specific program. Aggregation of the data collected on these various items suggested the following results:

1. The majority of programs utilized one or two recruitment procedures with in-school referrals serving as the primary means of attracting students who are classified as vocational education disadvantaged students.
2. Eighty-six percent of the respondents indicated that they used some means of assessing the academic within program success of students classified as vocational education disadvantaged students, while 60% of the respondents indicated that they used some means of assessing the vocational achievement of students classified as vocational education disadvantaged.
3. The majority of programs used one, two, or three different strategies to enlist and maintain community support for the vocational education programs. Among the most frequently cited strategies was: use of community advisory committees, with 43% of the sample indicating that they used such committees for programs serving vocational education disadvantaged students. A second frequently mentioned strategy was the use of news coverage with 32% of the respondents indicating that coverage of their program occurred between one and thirty-six times per year. Another mentioned means of enlisting community support was use of the electronic media with 12% of the programs reporting television coverage during the past school year and 9% of the programs indicating radio coverage during the past school year.
4. The majority of programs, 74%, indicated reliable linkages with industry for purposes of placing students who have completed the vocational education disadvantaged program. Forty-eight percent of the respondents indicated that their programs had reliable linkages with business and industry for purposes of providing training for students prior to completion.

5. Ten percent of the programs surveyed indicated reliable linkages with local labor unions for the purpose of placing program completers while 8% of the programs surveyed indicated reliable linkages with local labor unions for training purposes prior to program completion.

Program Administrators' Experience

Another input variable on which information was gathered was administrative experience, specifically the professional training and experience of the aggregate of program administrators. Each of the 98 administrators responded to each question of this portion of the questionnaire.

Each administrator was asked to provide information on the formal training, highest degree or certificate or diploma, he had obtained. The results indicated that the overwhelming majority of administrators have advanced degrees; twenty-nine percent hold masters degrees, forty-two percent hold administrative and supervisor certificates and fourteen percent hold a doctorate. Additionally, administrators were asked to provide information on the trades degrees that they had obtained. The data from the survey indicated that 12% of the administrators surveyed held trade degrees in addition to other formal training.

Administrators were asked to provide information on the kind and amount of their administrative experience in vocational education, their teaching experience, and their experience in working with vocational education disadvantaged students. The data indicated that the majority of administrators had one to five years of experience as a vocational education administrator, with three and five years being the modal choices. Only 7% of the surveyed administrators were in their first year of experience.

In terms of teaching experience no clear pattern emerged; rather experience varied dramatically between 2 and 15 years and the range extended from no teaching experience to 30 years of teaching experience before assuming administrative responsibilities.

In terms of working with disadvantaged students, the administrator data suggested that there was moderate experience among program administrators in vocational education programs serving the vocational education disadvantaged. Twenty-eight percent of the administrators surveyed had between 3-5 years of experience prior to assuming present responsibilities.

When queried about specific types of experience with vocational education disadvantaged students, the administrators indicated that 28% of their number gained experience in working with vocational education disadvantaged students while teaching. Twenty percent gained experience serving as an administrator in programs serving such a population; 16% received formal training relative to the disadvantaged and 13% received in-service training during their tenure as a program administrator to help them better meet the needs of the disadvantaged population. Over 9% of the administrators surveyed replied that their experience had come as a result of business or industrial experience and 5% indicated personal experience with the problems associated with disadvantaged vocational education students. The remainder of the sample, 9%, suggested that they had no experience or provided no information relative to serving this particular population.

Each administrator was asked to specify the kinds of in-service training needs that would be of greatest benefit to him in his role as administrator of vocational education programs serving vocational education disadvantaged students. Fig. IV-7, Reported In-Service Training Needs, displays the results of this particular question.

Understanding of the Statute

Another of the purposes addressed by the Program Administrator Questionnaire was to gather data on the understanding and implementation of the statute concerning vocational education disadvantaged students and the supporting Office of Education rules and regulations. Specifically, program administrators were asked to respond to their understanding of the definition of the vocational education disadvantaged students. In addition, they were asked to indicate the population served by their particular program and to indicate their understanding of the cause and effect language included in the rules and regulations of the Office of Education. The aggregated data suggested the following results:

Fig. IV-7

REPORTED IN-SERVICE TRAINING NEEDS

Categories	Frequencies	Percent of Total
1. More formalized training and instruction relative to the characteristics of, techniques for teaching, and curriculum development for the disadvantaged.	64	57.1%
2. Closer relationships with community members and professionals who work with or are concerned with the disadvantaged	21	18.8%
3. More information on federal legislation and funding relevant to the disadvantaged.	8	7.1%
4. More instructional support time (for planning and staff).	5	4.5%
5. More internship type training.	3	2.7%
6. More information, training and experience relative to career education.	2	1.8%
7. No information.	9	8.0%

112 total responses

1. Thirty-five percent of the program administrators surveyed responded by providing only the standard definition used by the Office of Education document, Guidelines For Identifying, Classifying and Serving the Disadvantaged and Handicapped Under the Vocational Education Amendments of 1968. Twenty-nine percent of the respondents indicated that they used the definition as provided by the Office of Education, but in addition used other categories of disadvantagement appropriate to their local area or school. Thirty-four percent of the program administrators surveyed indicated they did not use the standard definition of vocational education disadvantagement. Two percent did not respond to this question.
2. In terms of the special needs populations served in programs included in the sample, 81% of the responding administrators indicated their programs served vocational education disadvantaged students, 5% served handicapped students and 14% served both disadvantaged and handicapped students.
3. In terms of cause and effect, 31% of the administrators surveyed indicated clear understanding of the cause and effect language included in the Office of Education rules and regulations relative to the statute concerning vocational education disadvantaged students while 55% of the respondents omitted mention of the cause and effect language. Only 14% of the respondents indicated some confusion of the specific cause and effect language included in the rules and regulations.

DESCRIPTIVE INFORMATION PROGRAM OUTCOMES

Outcome Measures by Program Type and Program Environment

Outcome information for vocational education programs serving disadvantaged vocational education students for all programs, by type and by program environment for School year 1973-1974 and School Year 1974-1975 are presented in Tables IV-2, IV-3, IV-4, IV-5, and IV-6. Simple comparison of the data suggests that the surveyed programs have made progress in serving vocational education disadvantaged students during the two years from which data was gathered. For example, the dropout rate for disadvantaged students has declined, the reclassification rate has increased, and placement rates have increased considerably. The placement rate was particularly high for work experience type programs for the two years in which data were collected. This outcome reinforces the General Accounting Office's suggestion that "inclusion of actual work experience in vocational education curriculum provides students with valuable real life exposure to work requirements and

Table IV-2

AVERAGE
OUTCOME INFORMATION FOR VOCATIONAL EDUCATION PROGRAMS SERVING DISADVANTAGED VOCATIONAL EDUCATION STUDENTS
(N=98)

	School Year 1973-74	School Year 1974-75
Total Vocational Education Enrollment	1375 (n=79)	1451 (n=84)
Disadvantaged Vocational Education Enrollment	293 (n=87)	340 (n=95)
Disadvantaged Enrollment as a Percentage of Total Enrollment	42.7% (n=77)	48.6% (n=86)
Completion Rates of Vocational Education Students Eligible to Complete During Subject Year	74.8% (n=57)	72.1% (n=58)
Percent of Completers who were Vocational Education Disadvantaged Students	42.2% (n=65)	54.8% (n=69)
Dropout Rate for Regular Vocational Education Students	5.8% (n=55)	4.1% (n=54)
Dropout Rates for Vocational Education Disadvantaged Students	11.5% (n=78)	9.3% (n=83)
Percent of Vocational Education Disadvantaged Students Reclassified as Regular Vocational Students during Subject Year	10.0% (n=68)	10.3% (n=71)
Placement Rates for Regular Vocational Education Students	54.6% (n=49)	48.2% (n=43)
Placement Rates for Vocational Education Disadvantaged Students	59.7% (n=70)	65.8% (n=63)
Percent of Regular Vocational Education Program Completers Employed or Enrolled in a Continuing Education/Training Program at Time of Followup	57.2% (n=47)	47.9% (n=36)
Percent of Vocational Education Disadvantaged Program Completers Employed or enrolled in a Continuing Education/Training Program at Time of Followup	57.7% (n=65)	57.0% (n=48)

n = number of cases from which the mean was derived

TABLE IV-3

AVERAGE OUTCOME INFORMATION FOR VOCATIONAL EDUCATION PROGRAMS SERVING DISADVANTAGED VOCATIONAL EDUCATION STUDENTS BY PROGRAM TYPE FOR SCHOOL YEAR 1973-74

	REGULAR	MODIFIED	SPECIAL	WK/EXP.
Total Vocational Education Enrollment	1740 (n=30)	674 (n=12)	274 (n=19)	2394 (n=18)
Disadvantaged Vocational Education Enrollment	425 (n=33)	165 (n=15)	229 (n=19)	235 (n=20)
Disadvantaged Enrollment as a Percentage of Total Enrollment	24.6% (n=29)	38.4% (n=11)	90.2% (n=18)	27.9% (n=19)
Completion Rates of Vocational Education Students Eligible to Complete During Subject Year	82.8% (n=28)	84.8% (n=8)	61.8% (n=9)	59.5% (n=12)
Percent of Completers Who Were Vocational Education Disadvantaged Students	28.5% (n=27)	41.8% (n=10)	80.1% (n=15)	39.6% (n=13)
Dropout Rates for Regular Vocational Education Students	7.5% (n=27)	7.3% (n=9)	.6% (n=8)	3.9% (n=11)
Dropout Rates for Vocational Education Disadvantaged	13.1% (n=29)	9.0% (n=13)	12.5% (n=17)	9.3% (n=19)
Percent of Vocational Education Disadvantaged Students Reclassified as Regular Vocational Students During Subject Year	10.5% (n=24)	13.3% (n=13)	7.4% (n=17)	8.2% (n=14)
Placement Rates for Regular Vocational Education Students	56.4% (n=24)	66.8% (n=7)	32.5% (n=8)	59.5% (n=10)
Placement Rates for Vocational Education Disadvantaged Students	51.6% (n=25)	56.2% (n=12)	71.9% (n=17)	78.0% (n=16)
Percent of Regular Vocational Education Program Completers Employed or Enrolled in a Continuing Education Training Program at Time of Followup	66.0% (n=23)	63.5% (n=6)	26.9% (n=9)	60.9% (n=9)
Percent of Vocational Education Disadvantaged Program Completers Employed or Enrolled in a Continuing Education/Training Program at Time of Followup	53.2% (n=24)	53.3% (n=11)	61.8% (n=15)	68.8% (n=14)

n = number of cases from which the mean was derived

TABLE IV-4

AVERAGE OUTCOME INFORMATION FOR VOCATIONAL EDUCATION PROGRAMS SERVING DISADVANTAGED VOCATIONAL EDUCATION STUDENTS BY PROGRAM TYPE FOR SCHOOL YEAR 1974-75

	REGULAR	MODIFIED	SPECIAL	WK/EXP.
Total Vocational Education Enrollment	1702 (n=31)	673 (n=14)	301 (n=20)	2825 (n=19)
Disadvantaged Vocational Education Enrollment	401 (n=34)	127 (n=18)	259 (n=21)	473 (n=22)
Disadvantaged Enrollment as a Percentage of Total Enrollment	25.27% (n=33)	34.50% (n=13)	88.5% (n=20)	56.5% (n=20)
Completion Rates of Vocational Education Students Eligible to Complete During School Year	81.1% (n=29)	78.9% (n=7)	58.7% (n=10)	57.5% (n=12)
Percent of Completers Who Were Vocational Education Disadvantaged Students	27.4% (n=28)	37.0% (n=11)	82.8% (n=17)	60.0% (n=11)
Dropout Rate for Regular Vocational Education Students	4.0% (n=25)	5.7% (n=9)	3.8% (n=9)	3.2% (n=11)
Dropout Rate for Vocational Education Disadvantaged Students	7.2% (n=29)	10.3% (n=15)	13.3% (n=20)	7.6% (n=19)
Percent of Vocational Education Disadvantaged Students Reclassified as Regular Vocational Education Students During School Year	14.9% (n=24)	8.9% (n=15)	2.3% (n=18)	14.1% (n=14)
Placement Rates for Regular Vocational Education Students	59.1% (n=21)	40.0% (n=5)	12.1% (n=7)	54.5% (n=10)
Placement Rates for Vocational Education Disadvantaged Students	76.1% (n=24)	48.9% (n=11)	63.4% (n=14)	64.1% (n=14)
Percent of Regular Vocational Education Program Completers Employed or Enrolled in a Continuing Program at Time of Followup	68.7% (n=17)	27.5% (n=4)	12.4% (n=7)	45.2% (n=8)
Percent of Vocational Education Disadvantaged Completers Employed in a Continuing Education/Training Program at Time of Followup	58.3% (n=19)	47.3% (n=9)	49.6% (n=10)	70.4% (n=10)

n = number of cases from which the mean was derived

TABLE IV-5

AVERAGE OUTCOME INFORMATION FOR VOCATIONAL EDUCATION PROGRAMS SERVING DISADVANTAGED VOCATIONAL EDUCATION STUDENTS BY PROGRAM ENVIRONMENT FOR SCHOOL YEAR 1973-1974

	ENVIRONMENT SMSA-CC	ENVIRONMENT SMSA-OCC	ENVIRONMENT URBAN	ENVIRONMENT RURAL
Total Vocational Education Enrollment	1765 (n=34)	468 (n=11)	870 (n=16)	445 (n=18)
Disadvantaged Vocational Education Enrollment	379 (n=34)	274 (n=13)	295 (n=20)	159 (n=20)
Disadvantaged Enrollment as a Percentage of Total Enrollment	52.0% (n=32)	21.2% (n=11)	[illegible]7.9% (n=18)	44.4% (n=16)
Completion Rates of Vocational Education Students Eligible to Complete During School Year	65.8% (n=23)	83.1% (n=9)	65.8% (n=13)	44.4% (n=12)
Percent of Completers Who Were Vocational Education Disadvantaged Students	54.5% (n=26)	28.1% (n=8)	35.8% (n=14)	35.3% (n=17)
Dropout Rate for Regular Vocational Education Students	5.1% (n=24)	3.4% (n=7)	13.8% (n=9)	3.1% (n=15)
Dropout Rate for Vocational Education Disadvantaged Students	12.6% (n=32)	6.8% (n=9)	11.3% (n=18)	12.7% (n=19)
Percent of Vocational Education Disadvantaged Students Reclassified as Regular Vocational Education Students During School Year	10.4% (n=27)	18.0% (n=8)	10.9% (n=15)	5.0% (n=18)
Placement Rates for Regular Vocational Education Students	44.5% (n=21)	58.1% (n=8)	72.6% (n=7)	59.0% (n=13)
Placement Rates for Vocational Education Disadvantaged Students	59.7% (n=28)	41.6% (n=9)	71.2% (n=17)	72.3% (n=16)
Percent of Regular Vocational Education Program Completers Employed or Enrolled in a Continuing Education/Training Program at Time of Followup	48.8% (n=21)	27.4% (n=7)	67.3% (n=7)	60.9% (n=12)
Percent of Vocational Education Disadvantaged Completers Employed in a Continuing Education/Training Program	55.0% (n=29)	52.2% (n=6)	68.3% (n=15)	54.6% (n=15)

n = number of cases from which the mean was derived

TABLE IV-6

AVERAGE OUTCOME INFORMATION FOR VOCATIONAL EDUCATION PROGRAMS SERVING DISADVANTAGED VOCATIONAL EDUCATION STUDENTS BY PROGRAM ENVIRONMENT FOR SCHOOL YEAR 1974-75

	ENVIRONMENT SMSA-CC	ENVIRONMENT SMSA-OCC	ENVIRONMENT URBAN	ENVIRONMENT RURAL
Total Vocational Education Enrollment	2128 (n=33)	1980 (n=15)	958 (n=18)	262 (n=18)
Disadvantaged Vocational Education Enrollment	604 (n=37)	297 (n=16)	181 (n=21)	135 (n=21)
Disadvantaged Enrollment as a Percentage of Total Enrollment	70.7% (n=33)	29.7% (n=15)	36.8% (n=20)	37.8% (n=18)
Completion Rates of Vocational Education Students Eligible to Complete During School Year	77.0% (n=16)	64.0% (n=9)	62.8% (n=14)	89.0% (n=14)
Percent of Completers Who Were Vocational Education Disadvantaged Students	70.5% (n=20)	40.5% (n=11)	43.9% (n=15)	37.7% (n=17)
Dropout Rate for Regular Vocational Education Students	4.6% (n=23)	2.7% (n=6)	3.1% (n=10)	4.3% (n=15)
Dropout Rate for Vocational Education Disadvantaged Students	9.7% (n=32)	7.9% (n=11)	10.3% (n=18)	8.8% (n=21)
Percent of Vocational Education Disadvantaged Students Reclassified as Regular Vocational Education Students During School Year	9.4% (n=28)	20.9% (n=10)	7.4% (n=16)	10.1% (n=19)
Placement Rates for Regular Vocational Education Students	34.2% (n=19)	53.7% (n=7)	59.6% (n=7)	62.0% (n=10)
Placement Rates for Vocational Education Disadvantaged Students	56.5% (n=23)	55.3% (n=10)	68.6% (n=16)	86.5% (n=14)
Percent of Regular Vocational Education Program Completers Employed or Enrolled in a Continuing Education/Training Program at Time of Followup	44.2% (n=17)	66.7% (n=3)	48.1% (n=7)	48.7% (n=9)
Percent of Vocational Education Disadvantaged Completers Employed in a Continuing Education/Training Program	51.1% (n=21)	75.0% (n=4)	63.5% (n=12)	54.5% (n=11)

n = number of cases from which the mean was derived

helps assure they receive training appropriate to employer needs. Such experience often can better prepare students for subsequent placement in jobs related to their training."[17/]

For the descriptive statistics as well as additional analysis, data was blocked by Program Type and by Program Environment. This blocking was intended to encourage local administrators to compare the presented data with similar information gathered from the local program by matching the programs according to program type and environment.

The categories of Program Type and Environment Type are those defined in Chapter 1 and Appendix C of this Volume of the final report. For Program Type, the categories were Regular with Support Services, Modified with Support Services, Special, and Work-Experience. For Program Environment, the categories were SMSA Central City, SMSA Non-Central City, Urban Non-SMSA, and Rural.

It is recommended that the reader, in particular the local program administrator, remain especially sensitive to calculations that block on environment type. While the calculations by program type may suggest cost estimates a local administrator would be interested in if he were considering a programmatic switch, costs by program type vary substantially according to input costs, environments and subtle variations in program services. The environment calculations are more stable, reflecting conditions less susceptible to fluctuation given the permanent location of many programs and given the parallel of costs of input services under similar environmental conditions.

RESOURCE UTILIZATION PATTERNS

Administrators' Priority Rankings of Program Components

Local program administrators were asked to rank order the eight components developed during the course of the research project in order

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[17/] What Is The Role of Federal Assistance For Vocational Education? Report to the Congress by the Comptroller General of the United States. Washington, D.C.: U.S. General Accounting Office, December 31, 1974, p. 77.

to assess the relative importance of each component to all other components. Figure IV-8 depicts the results of this portion of the administrator questionnaire using mean rank for all 98 programs and categorized by program type and program environment. Each administrator was asked to rank order the components according to his present program and to rank order the components according to some ideal model toward which he aspired to move his program. For all 98 programs the present rank order results were as follows: instructional personnel was judged to be most important, followed by instructional materials, administration and supervision, support services, staff development, facilities, community public relations and instructional related needs. The ideal rank order was very similar with instructional personnel again being judged the most critical component. Instructional materials was ranked as the second most critical component and support services was ranked third. These were followed by administration and supervision, staff development, facilities, community public relations, and instructional related needs.

With little variation this pattern repeated through the four program types and the four environment types. Instructional personnel was ranked consistently as the most critical component and in each instance community public relations or instructional related needs were ranked as the seventh and eighth most critical components. Staff development and facilities were ranked as the fifth and sixth most critical components.

The variance that occurred in the rank order occurred in the ranking of instructional materials, support services, and administration and supervision. Instructional materials was consistently ranked as the second most critical variable with the exception of programs in program environment #1, SMSA Central City, and program type #3, Special. In the program environment #1, support services was the second most critical variable followed by instructional materials and administration and supervision.

Administration and supervision was judged to be the second most critical component in only two instances. In program type #3, Special programs, administration and supervision was judged to be the second most critical

Fig. IV-8

COMPONENT RANK ORDER

COMPONENTS	ALL		PROGRAM TYPE I *		PROGRAM TYPE II		PROGRAM TYPE III		PROGRAM TYPE IV	
	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B
I. Support Services (e.g., Guidance Counseling, Tutoring Services)	3.709	3.333	3.563	3.438	4.063	3.250	3.500	3.250	3.884	3.313
II. Instructional Materials, Supplies, Related Services, and Equipment (e.g., Bilingual texts, Raw Materials)	3.106	3.301	3.031	3.219	3.063	3.313	3.333	3.722	3.053	3.000
III. Instructional Personnel (e.g., Remedial Specialists, Teacher Aides)	2.141	1.859	2.156	1.939	2.125	1.875	2.056	1.611	2.211	1.944
IV. Instructional Related Needs (e.g., Release Time, Petty Cash Fund)	6.072	6.349	6.250	6.063	5.125	6.125	6.647	6.889	6.056	6.529
V. Staff Development (e.g., In-Service Training, Program Visitation)	4.726	4.536	4.469	4.063	4.313	4.563	5.647	5.667	4.684	4.222
VI. Community Public Relations (e.g., Advisory Committees, Advertising)	5.776	5.736	6.625	6.156	5.813	5.875	4.889	5.222	5.158	5.353
VII. Administration and Supervision (e.g., Program Planning; Staff Supervision	3.616	3.976	4.125	4.406	3.125	3.750	3.000	3.158	3.789	4.294
VIII. Facilities (e.g., Classroom Space, Model Environment)	4.869	4.855	4.969	5.344	4.313	4.625	5.056	3.833	5.000	5.235

COMPONENTS	ALL		PROGRAM ENVIRONMENT I **		PROGRAM ENVIRONMENT II		PROGRAM ENVIRONMENT III		PROGRAM ENVIRONMENT IV	
	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B
I. Support Services (e.g., Guidance Counseling, Tutoring Services)	3.709	3.333	3.194	2.839	3.813	3.667	4.158	3.278	4.000	3.900
II. Instructional Materials, Supplies, Related Services, and Equipment (e.g., Bilingual texts, Raw Materials)	3.106	3.301	3.484	3.774	3.250	3.733	2.526	2.667	2.947	2.789
III. Instructional Personnel (e.g., Remedial Specialists, Teacher Aides)	2.141	1.859	1.839	1.719	2.688	1.933	2.053	1.842	2.263	2.053
IV. Instructional Related Needs (e.g., Release Time, Petty Cash Fund)	6.072	6.349	6.300	6.419	5.438	6.333	5.889	6.111	6.421	6.474
V. Staff Development (e.g., In-Service Training, Program Visitation)	4.726	4.536	4.500	4.484	4.875	4.933	4.526	3.947	5.158	4.895
VI. Community Public Relations (e.g., Advisory Committees, Advertising)	5.776	5.736	5.419	5.355	6.375	5.933	5.947	6.222	5.684	5.737
VII. Administration and Supervision (e.g., Program Planning; Staff Supervision	3.616	3.976	3.645	4.032	3.750	3.600	3.211	3.722	3.850	4.400
VIII. Facilities (e.g., Classroom Space, Model Environment)	4.869	4.855	4.581	4.452	5.200	4.867	5.263	5.556	4.684	4.842

* Program Type I = Regular; Program Type II = Modified; Program Type III = Special; Program Type IV = Wk/Exp.

** Environment I = SMSA-CC; Environment II = SMSA-OCC; Environment III = Urban; Environment IV = Rural.

variable in both the present rank order and the ideal rank order. In program environment #2, SMSA Non-Central City, administration and supervision was judged to be the second most critical variable in the ideal rank order.

Program support services usually ranked as the third or fourth most critical variable; only in program type #2, Modified Program with Support Services, and program environment #1, SMSA-Central City programs was program support services judged to be the second most critical component. In each instance, such ranking logically reflected the nature of the program.

Administrators' Priority Rankings of Program Elements

One of the assessment features devised to address the tasks of: (a) "estimating needs for current programs to achieve demonstrated effectiveness levels" through varied patterns of resource utilization, and (b) to provide some basis for estimating the resource requirements to satisfactorily serve vocational education disadvantaged students was the construction of an instrument to collect data from local program administrators concerning the relative importance of all elements, which when taken together, constitute an entire vocational education program serving vocational education disadvantaged students. In addition to providing cost information by component and by element within each component, administrators were asked to rank each of the listed elements according to their importance to a successful vocational education program for disadvantaged students. It was not a rank order task which required the administrator to nominate the most important elements in descending order; rather, the importance ranking task provided an opportunity for the administrator to rank each element according to the role it played or could play in his own program given unlimited resources. A five point scale was utilized to collect the data with "one" indicating the highest possible priority ranking and a score of "five" indicating the lowest possible priority ranking. Specifically the importance rating choices were explained as follows: (a) #1, most important, absolutely essential to program success, (b) # 2, very important, increases program success very much, (c) #3, important, increases comprehensiveness of program but not essential, (d) #4, less important, useful in some ways but not necessary, (e) #5, least important, sometimes useful but could easily do without.

Eighty-five percent of the respondents complied with the request to rank program elements. Frequency statistics were developed from these rankings for all programs and by program type and program environment. The mean priority ranks of each element by program type constitutes Table IV-7 of this report. Similarly, Table IV-8 consists of the mean priority rank for all program elements by type of environment.

The elements of critical importance are those chosen for which the mean rank registered between 1, absolutely essential, and 2, very important. By plotting those elements for which the mean rank registered between 1 and 2 for all programs and by program type and program environment, it was possible to construct crude estimates of patterns of resource utilization although the issue of levels of resources was not addressed during this exercise. Figure IV-9 depicts the essential program elements when plotted on the basis of mean rank. A typical pattern emerges which reflects the emphases of the programs found in various environments and by various types of programs. For example, staff travel and student transportation services were judged to be extremely important elements for SMSA-Central City programs although not of critical importance to programs located in any other environment. Similarly, a critical need of rural programs is attendance at professional meetings and visitation to other programs each of which serves to suggest the relative isolation of many rural programs.

Critical resources or elements by program type are also indicated on Table IV-7. For example, among the critical elements of a work experience program which were not indicated to be critical elements in the other three types of programs were parent and family counseling, a task analysis of occupations, an additional period of employment for instructional staff, community and employer surveys, and a formalized system for accessing community resources. Each of these elements reflects the particular emphasis and mission of the work experience concept.

The mean priority rank for all programs functions to assist in the development of a statement of resource need rather than simply indicating patterns of resource utilization, i.e., the mean rank for all possible elements when taken collectively indicates those several elements judged

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Table IV-7

PRIORITY RANK BY PROGRAM TYPE

QUESTIONNAIRE NEEDS ASSESSMENT BREAKDOWN OF SECTION K *

Component I: Program Support Services

	Element and Questionnaire #	All Mean Rank	Reg.	Mod.	Spec.	Wk-Exp.
1.	Guidance & Counseling (1)	1.45	1.74	2.88	1.32	1.27
2.	Job Placement Coordinator (7)	1.68	2.00	1.88	1.37	1.35
3.	Work-Experience Coordinator (6)	1.98	2.27	2.00	2.21	1.43
4.	Diagnost. & Evalu. (4)	2.06	2.13	2.22	2.16	1.75
5.	Administrator & Clerical (10)	2.25	1.97	2.29	1.84	2.65
6.	Parents/Family Counseling	2.31	2.48	2.24	2.58	1.90
7.	Staff Travel (15)	2.34	2.52	2.50	2.11	2.28
8.	Trans. Services for Students (12)	2.36	2.50	2.94	3.00	2.00
9.	Home/School Coordinator (5)	2.57	2.58	2.47	3.11	2.26
10.	Psychological Testing (3)	2.63	2.93	2.53	2.89	2.39
11.	Tutoring Services (8)	2.64	2.42	3.00	3.05	2.41
12.	Student Aid (13)	2.81	3.19	3.00	2.71	2.65
13.	Health Services (11)	3.02	3.07	3.23	3.32	2.59
14.	Consultant Services (9)	3.15	3.00	3.29	3.53	3.11
15.	Food Services (14)	3.42	3.39	3.27	3.61	3.63
16.	Readers (16)	4.74	4.20	4.27	4.43	4.07
17.	Interpreters (17)	4.35	4.41	4.20	4.92	4.50

Component II: Instructional Materials, Supplies, Equipment, and Related Services

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Tools and Equipment (12)	1.57	1.62	1.24	1.61	1.78
2.	A-V Materials (8)	1.68	1.67	1.89	1.63	1.56
3.	Remedial Materials (7)	1.78	1.78	1.88	1.74	1.86
4.	Individualized Inst. Modules (1)	1.84	2.06	1.65	1.68	1.82
5.	Maintenance & Repair	1.94	2.14	1.82	1.88	1.73
6.	Routine Classroom Materials	1.95	1.94	1.89	1.72	2.31
7.	Printed Materials (3)	1.96	1.88	2.00	2.05	2.18
8.	Electronic Aids (9)	1.97	2.06	1.94	1.84	2.00
9.	Raw Materials (10)	2.00	1.86	1.81	2.47	2.06
10.	Task Analysis of Occup. (2)	2.23	2.62	2.20	2.26	1.75
11.	Field Trips (13)	2.34	2.50	2.00	2.41	2.35
12.	Furniture & Furnishing (16)	2.36	3.52	1.88	2.29	2.60
13.	Teaching Games/Working Models (6)	2.71	3.04	2.41	2.83	5.31
14.	Minority Culture Oriented Materials (4)	3.03	3.52	2.87	3.33	2.60
15.	Contractual Services (14)	3.18	3.04	3.00	3.87	3.29
16.	Bilingual Texts (5)	4.03	4.15	4.00	4.56	3.71

Component III: Instructional Personnel

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Reg. Voc. Ed. Inst. Staff (1)	1.29	1.16	1.71	1.24	1.21
2.	Reg. Inst. Staff (2)	1.78	1.55	2.00	1.93	1.95
3.	Remedial Reading Spec. (3)	1.87	1.61	1.93	1.94	2.17
4.	Remedial Math Spec. (4)	2.23	2.54	2.21	2.13	2.41
5.	Curriculum Spec. (8)	2.70	2.61	2.92	2.86	2.73
6.	Teacher Aides (7)	2.97	2.52	2.93	2.73	2.94
7.	Media Specialist (6)	2.97	3.28	2.80	1.19	2.88
8.	Bilingual Specialist (5)	3.79	3.96	3.36	4.00	3.73

Component IV: Instructional Related Needs

	Element and Questionnaire #	All Mean Rank	Reg.	Mod.	Spec.	Wk-Exp.
1.	ID of Students (6)	1.68	2.04	1.93	1.93	1.53
2.	Release Time for Planning (8)	1.90	2.23	1.92	1.59	1.67
3.	Release Time for Student Conferences (2)	2.16	2.47	2.27	3.07	1.73
4.	Teacher Clerical Support (7)	2.18	2.27	2.13	1.88	2.43
5.	Additional Period of Empl. (1)	2.32	2.41	2.12	3.08	1.87
6.	Sub Teacher Pay (4)	2.85	2.85	3.00	2.56	3.00
7.	Petty Cash Fund (3)	3.34	3.32	3.07	3.07	4.23
8.	Monetary Reward System	3.59	4.20	3.20	3.43	3.33

Component V: Staff Development

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Teacher In-Service (1)	1.44	1.36	1.82	1.50	1.16
2.	Administrator In-Service (2)	1.88	1.90	2.13	1.69	1.81
3.	Needs Assessment (3)	2.01	2.07	2.25	2.00	1.82
4.	Attendance at Prof. Mt.	2.06	2.29	2.13	1.69	2.33
5.	Visitation at Other Programs (4)	2.28	2.06	2.53	2.53	2.33

Component VI: Community PR

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Community/Industry Committee (1)	1.84	2.98	1.56	1.71	1.78
2.	Interagency Coordinator (7)	2.05	2.38	2.42	1.63	1.65
3.	Community/Industry Visitation (4)	2.20	2.50	2.00	2.19	2.71
4.	Community/Industry Referral (3)	2.35	2.63	2.36	2.25	2.06
5.	Labor Union Liaison (2)	3.51	3.32	2.50	3.31	3.00
6.	Information Dissemination Office	3.07	3.07	3.55	3.00	2.81
7.	Advertising Budget (5)	3.51	3.89	3.08	2.81	3.31

Component VII: Administration & Supervision

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Program Planning & Development (1)	1.19	1.12	1.20	1.24	1.26
2.	Program Administration (10)	1.41	1.66	1.33	1.25	1.39
3.	Program Evaluation & Research (2)	1.47	1.34	1.60	1.53	1.53
4.	Staff Supervision (3)	1.59	1.69	1.47	1.24	1.84
5.	Advisory Committee (4)	2.01	2.13	1.80	2.00	2.00
6.	Follow-up Surveys (7)	2.03	1.94	2.29	2.06	[illegible]
7.	Accessing Community Resources (6)	2.15	2.33	2.27	2.00	1.89
8.	Community/Emp. Surveys (8)	2.28	2.47	2.40	2.38	1.89
9.	Other Community PR (5)	2.44	2.86	2.07	2.07	2.39
10.	Statistical Services (9)	2.51	2.39	2.36	2.63	3.44

Component VIII: Facilities

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Shop/Lab Space (2)	1.44	1.50	1.33	1.38	1.63
2.	Classroom Space (1)	1.51	1.56	1.18	1.35	1.83
3.	Facilities Maintenance (5)	2.04	1.96	2.13	1.87	2.38
4.	Office Space (3)	2.05	2.13	1.75	1.83	2.33
5.	Learning Lab (7)	2.28	2.33	2.00	2.42	2.00
6.	Curriculum Lab (6)	2.66	2.82	2.57	2.93	2.28
7.	Model Environments (4)	2.68	2.74	1.93	3.31	2.88

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* Section K is a part of the Administrator Questionnaire and is reproduced in Appendix D.

Table IV-8

PRIORITY RANK BY ENVIRONMENT

QUESTIONNAIRE NEEDS ASSESSMENT BREAKDOWN OF SECTION K *

Component I: Program Support Services

	Element and Questionnaire #	All Mean Rank	SMSA-CC	SMSA-OCC	Non-SMSA	Rural
1.	Guidance & Counseling (1)	1.45	1.94	1.63	3.95	1.58
2.	Job Placement Coordinator (7)	1.68	1.42	1.80	1.74	1.72
3.	Work-Experience Coordinator (6)	1.98	1.52	2.13	1.74	2.11
4.	Diagnost. & Evalu. (4)	2.06	1.90	2.15	2.30	1.90
5.	Admin. & Cleri. (10)	2.25	1.68	1.85	2.47	2.83
6.	Parents/Family Counseling	2.31	2.40	2.44	2.15	2.53
7.	Staff Travel (15)	2.34	1.90	2.50	2.29	2.33
8.	Trans. Services for Students (12)	2.56	1.76	2.31	2.72	3.33
9.	Home/School Coordinator (5)	2.57	2.29	2.33	2.70	2.74
10.	Psychological Testing (3)	2.63	2.07	2.54	2.70	2.50
11.	Tutoring Services (8)	2.64	2.04	2.77	2.90	2.58
12.	Student Aid (13)	2.81	2.23	2.75	2.67	2.94
13.	Health Services (11)	3.02	2.16	3.17	2.67	3.61
14.	Consultant Services (9)	3.15	3.00	3.15	3.26	3.77
15.	Food Services (14)	3.42	2.46	3.25	3.65	3.89
16.	Readers (16)	4.74	4.20	4.09	4.27	4.35
17.	Interpreters (17)	4.35	4.48	4.00	2.88	4.63

Component II: Instructional Materials, Supplies, Equipment, and Related Services

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Tools and Equipment (12)	1.57	1.71	1.31	1.60	1.56
2.	A-V Materials (8)	1.68	1.79	1.67	1.67	1.56
3.	Remedial Materials (7)	1.78	1.97	1.46	1.70	1.90
4.	Individualized Inst. Modules (1)	1.84	2.13	1.73	1.75	1.58
5.	Maintenance & Repair (15)	1.93	1.75	2.00	1.94	2.06
6.	Routine Classroom Materials (11)	1.95	1.93	2.07	1.85	2.06
7.	Printed Materials (3)	1.96	2.13	2.20	1.57	1.94
8.	Electronic Aids (9)	1.97	2.00	2.14	2.05	1.72
9.	Raw Materials (10)	2.00	2.41	1.55	2.00	1.72
10.	Task Analysis of Occup. (2)	2.23	2.43	1.67	2.00	2.67
11.	Field Trips (13)	2.34	2.63	2.50	2.10	2.00
12.	Furniture & Furnishing (16)	2.36	2.22	2.27	2.06	2.94
13.	Teaching Games/Working Models (6)	2.71	2.97	2.69	2.53	2.94
14.	Minority Culture Oriented Materials (4)	3.03	2.82	2.73	3.31	3.67
15.	Contractual Services (14)	3.18	3.36	3.00	3.10	3.47
16.	Bilingual Texts (5)	4.03	3.75	3.92	4.29	4.67

Component III: Instructional Personnel

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Reg. Voc. Ed. Inst. Staff (1)	1.29	1.36	1.31	1.38	1.06
2.	Reg. Inst. Staff (2)	1.78	1.63	2.27	1.68	1.82
3.	Remedial Reading Spec. (3)	1.87	1.63	2.33	2.05	1.81
4.	Remedial Math Spec. (4)	2.23	2.25	2.00	2.47	1.81
5.	Curriculum Spec. (8)	2.70	2.96	2.54	2.47	2.88
6.	Teacher Aides (7)	2.97	2.76	2.39	2.83	2.88
7.	Media Spec. (6)	2.97	2.86	2.69	3.28	3.06
8.	Bilingual Spec. (5)	3.79	3.64	3.25	3.94	4.25

Component IV: Instructional Related Needs

	Element and Questionnaire #	All Mean Rank	SMSA-CC	SMSA-OCC	Non-SMSA	Rural
1.	ID of Students (6)	1.68	1.79	1.64	[illegible]	1.28
2.	Release Time for Planning (8)	1.90	2.04	1.93	1.53	1.88
3.	Release Time for Student Conferences (2)	2.16	2.56	2.23	1.50	2.19
4.	Teacher Clerical Support (7)	2.18	2.20	2.20	2.07	1.94
5.	Additional Period of Employment (1)	2.32	2.90	1.93	1.88	2.24
6.	Sub Teacher Pay (4)	2.85	2.89	2.62	2.23	3.41
7.	Petty Cash Fund (3)	3.34	3.42	3.18	3.50	3.38
8.	Monetary Reward System	3.59	3.46	3.67	3.50	4.00

Component V: Staff Development

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Teacher In-Service (1)	1.44	1.65	1.57	1.05	1.14
2.	Administrator In-Service (2)	1.88	1.93	1.63	1.50	2.67
3.	Needs Assessment (3)	2.01	1.88	2.03	2.06	2.72
4.	Attendance at Prof. Mt.	2.06	2.23	2.25	2.05	1.30
5.	Visitation at Other Programs (4)	2.28	2.45	2.42	2.11	1.95

Component VI: Community PR

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Community/Industry Committee (1)	1.84	1.82	1.95	2.00	1.27
2.	Interagency Coordinator (7)	2.05	2.33	1.79	1.47	1.67
3.	Community/Industry Visitation (4)	2.20	2.31	2.25	1.89	1.71
4.	Community/Industry Referral (3)	2.35	2.30	2.12	2.24	2.26
5.	Labor Union Liaison (2)	3.51	3.32	2.70	3.20	2.45
6.	Information Dissemination Office	3.07	2.78	3.36	3.19	3.02

Component VII: Administration & Supervision

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Program Planning & Development (1)	1.19	1.78	1.13	1.22	1.40
2.	Program Administration (10)	1.41	1.45	1.14	1.18	1.58
3.	Program Evaluation & Research (2)	1.47	1.59	1.44	1.28	1.54
4.	Staff Supervision (3)	1.59	1.65	1.60	3.89	2.18
5.	Advisory Committee (4)	2.01	1.83	2.44	2.22	1.46
6.	Follow-up Surveys (7)	2.03	1.94	2.91	1.93	1.77
7.	Accessing Community Resources (6)	2.15	2.07	1.83	2.17	1.93
8.	Community/Emp. Surveys (8)	2.28	2.48	2.54	2.06	1.84
9.	Other Community PR (5)	2.44	2.20	2.23	2.47	2.21
10.	Statistical Services (9)	2.51	2.37	2.74	2.59	2.59

Component VIII: Facilities

	Element and Questionnaire #	All Mean Rank	1	2	3	4
1.	Shop/Lab Space (2)	1.44	1.58	1.42	2.29	1.30
2.	Classroom Space (1)	1.51	1.53	1.56	1.55	1.29
3.	Facilities Maintenance (5)	2.04	2.07	2.38	2.20	1.58
4.	Office Space (3)	2.05	1.70	2.32	2.35	1.90
5.	Learning Lab (7)	2.28	2.48	2.08	2.23	1.74
6.	Curriculum Lab (6)	2.66	2.78	2.98	2.58	2.08
7.	Model Environments (4)	2.68	3.00	2.98	3.00	[illegible]

* Section K is a part of the Administrator Questionnaire and is reproduced in Appendix D.

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Fig. IV-9

Resource Utilization Patterns by Priority Rankings of Program Elements

	Program Type					Program Environment				
	All	Reg.	Mod.	Spec.	Wk-Exp.	All	SMSA-CC	SMSA-OCC	Non-SMSA	Rural
Component I: Program Support Services										
Guidance & Counseling	X	X		X	X	X	X	X		X
Job Placement Coordinator	X		X	X	X	X	X	X	X	X
Work Experience Coordinator	X				X	X	X		X	
Disagnostic & Evaluative					X		X			X
Administrative & Clerical		X		X			X	X		
Parent /Family Counseling					X					
Staff travel							X			
Transportation Services							X			
Component II: Instructional Materials, Supplies, Equipment, and Related Services										
Tools & Equipment	X	X	X	X	X	X	X	X	X	X
Audio-Visual Equipment	X	X	X	X	X	X	X	X	X	X
Remedial Materials	X	X	X	X	X	X	X	X	X	X
Individualized Instructional Modules	X		X	X	X	X		X	X	X
Maintenance & Repair	X		X	X	X	X	X		X	
Routine Classroom Materials	X	X	X	X		X	X		X	
Printed Materials	X	X				X			X	X
Electronic Aids	X		X	X					X	X
Raw Materials		X								X
Task Analysis of Occupation					X		X			
Furniture & Furnishing		X					X			
Component III: Instructional Personnel										
Regular Vocational Education Instructional Staff	X	X	X	X	X	X	X	X	X	X
Regular Instructional Staff	X	X		X	X	X	X		X	X
Remedial Reading Specialist	X	X	X			X	X			X
Remedial Math Spec.										X
Component IV: Instructional Related Needs										
ID of Students	X		X	X	X	X	X	X		X
Release Time for Planning	X		X	X	X	X		X	X	X
Release Time for Student Conferences					X				X	
Teacher Clerical Support				X				X		X
Additional Period of Employment					X				X	
Component V: Staff Development										
Teacher In-Service	X	X	X	X	X	X	X	X	X	X
Administrator In-Service	X	X		X	X	X	X	X	X	
Needs Assessment					X	X				X
Attendance at Professional Meetings				X						X
Visitation at other programs										
Component VI: Community Public Relations										
Community-Industry Committee	X	X	X	X	X	X	X	X		
Interagency Coordinator			X	X				X	X	X
Component VII: Administration and Supervision										
Program Planning and Development	X	X	X	X	X	X	X	X	X	X
Program Administration	X	X	X	X	X	X	X	X	X	X
Program Evaluation & Research	X	X	X	X	X	X	X	X	X	X
Staff Supervision	X	X	X	X	X	X	X	X		
Advisory Committee			X				X		X	X
Follow-up Surveys		X			X		X			X
Accessing Community Resources					X			X		X
Community Employer Surveys					X					X
Comm./Indus. Visitation									X	X
Component VIII: Facilities										
Shop/lab Space	X	X	X	X	X	X	X	X		X
Classroom Space	X	X	X	X	X	X	X	X	X	X
Facilities Maintenance		X		X						X
Office Space		X	X				X			X
Model Environments		X								
Learning Lab										X

by the composite of local administrators to be the elements most deserving of resource expenditure given adequate funds. Several noteworthy occurrences in regarding the relative importance of program elements that have received attention in the past several years emerged as a result of displaying the mean rank information for each component. For example, in Component I, Program Support Services, guidance and counseling services, job placement coordinator and work experience coordinator all received mean ranks of greatest importance.

At least two unexpected occurrences appeared. First, parent and family counseling emerged as a relatively important element in the component of support services. Second, psychological testing which was expected to be of great importance was judged to have been far less important than a number of other program support services ranked in that component.

Component II disclosed similar, unexpected rankings. Individualized instructional modules and materials thought to have been the key element was judged to be of less overall importance than elements such as tools and equipment, audio-visual materials and remedial materials.

In Component III, Instructional Personnel, the mean ranks corresponded with logical expectations with the possible exception of the element of teacher aides, a program element which has received increasing attention during recent years.

Component IV, Instructional Related Needs, was noteworthy because of the lesser importance attached to an additional period of employment by local administrators.

Component V, Staff Development, was noteworthy in that administrator in-service training received considerable support among the group for whom such exercises would be designed.

Component VI, Community Public Relations, contained only one element achieving the important mean rank of less than 2. This particular element, a community-industry committee, reflects common practice in many vocational education programs. The important occurrence in this component was the relative importance of a new role, the interagency coordinator whose job would include accessing all available resources in the community for incorporation into a comprehensive vocational education program.

Component VII, Administration and Supervision, reflects the concern of local administrators to attend to the everyday concerns of an ongoing program. Facilities, Component VIII, also contained at least one noteworthy occurrence. The element of shop/lab space received the greatest support in terms of its overall mean rank. One might infer from such a score that vocational skill training for the disadvantaged is a continually increasing concern of local program administrators.

Vocational Education Staff Priority Rankings of Program Elements

Ninety-one vocational education staff from seven of the site visited programs were administered the Teacher's Guided Interview Questionnaire and asked to rank order the 78 program elements in terms of their importance to the success of a vocational education disadvantaged program.

The breakdown of these seven programs according to the program type and program environment is as follows:

Regular with Support Services, SMSA Central City	1
Regular with Support Services, Urban	1
Special, SMSA Central City	1
Work Experience, SMSA Central City	3
Work Experience, SMSA Outside Central City	1

Staff personnel were asked to rank each of the listed elements according to their importance to a successful vocational education program for disadvantaged students. It was not a rank order task which required the respondent to nominate the most important elements in descending order; rather, the importance ranking task provided an opportunity for the staff person to rank each element according to the role it played or could play in his/her own program given unlimited resources. A five point scale was utilized to collect the data with "one" indicating the highest possible priority ranking and a score of "five" indicating the lowest possible priority ranking. Specifically the importance rating choices were explained as follows: (a) #1, most important, absolutely essential to program success, (b) #2, very important, increases program success very much, (c) #3, important, increases comprehensiveness of program but not essential, (d) #4, less important, useful in some ways but not ncessary, (e) #5, least important, sometimes useful but could easily do without.

Further, staff personnel were classified into six categories: vocational education teachers, work-experience coordinators, vocational or regular guidance counselors, classroom teacher aides, related academic instructors and special education teachers and other special support personnel such as media specialists.

The results are presented in Table IV-9, Vocational Education Staff Priority Rankings of Program Elements. Mean ranks for each program element are presented for All staff, and broken down by the six categories of personnel.

All is the mean rank for the responses of all staff taken together; "1" represents the responses of vocational education teachers; "2", work experience coordinators; "3", vocational or regular guidance counselors; "4", aides; "5", related basic education teachers; and "6", special education teachers and other special support personnel such as media specialists.

The element list within each component was constructed by using the mean rank order of elements within each component as generated through use of the data on the Program Administrator Questionnaire. Thus, the list of elements under Component I, Program Support Services, reads Guidance and Counseling, Job Placement Coordinator, Work Experience Coordinator, Diagnostic and Evaluation, Administrative Clerical and Parent/Family Counseling. The mean rank for these same elements using the data from the Teacher Guided Interview Questionnaire resulted in a similar ranking with the exception that the element Parent/Family Counseling received a mean score which ranked it as the fourth most critical element for teachers, while the mean rank for this element placed it sixth among the administrator ranking.

TABLE IV-9

Vocational Education Staff
Priority Rankings of Program Elements
(N=91)

	Component I: Program Support Services	ALL	Tchrs 1	Coord 2	Couns. 3	Aides 4	Rel Tchrs 5	Supp. Personnel 6
	Element and Questionnaire #							
1.	Guidance & Counseling (1)	1.39	1.57	1.37	1.05	2.00	1.58	1.14
2.	Job Placement Coordinator (7)	1.92	1.83	2.00	1.95	2.00	1.67	2.43
3.	Work-Experience Coordinator (6)	2.12	2.03	1.68	2.26	3.00	2.08	3.14
4.	Diagnost. & Evalu. (4)	2.17	2.00	2.26	2.58	1.50	2.00	2.00
5.	Admin. & Cleri. (10)	2.33	2.30	2.42	2.16	2.00	2.42	2.57
6.	Parents/Family Counseling (2)	2.14	2.13	2.16	2.21	3.50	1.92	1.86
7.	Staff Travel (15)	2.82	3.37	2.26	1.95	3.00	3.33	3.43
8.	Trans. Services for Students (12)	2.85	3.14	2.90	2.05	3.50	3.00	3.29
9.	Home/School Coordinator (5)	2.65	2.67	2.61	2.68	3.50	2.33	2.00
10.	Psychological Testing (3)	2.40	2.38	2.16	2.47	2.50	2.50	2.71
11.	Tutoring Services (8)	2.84	2.89	2.79	2.94	3.50	2.25	3.29
12.	Student Aid (13)	3.13	3.62	3.00	2.53	3.50	2.92	3.29
13.	Health Services (11)	3.02	2.96	2.90	3.47	2.00	2.75	3.29
14.	Consultant Services (9)	3.00	3.21	3.11	2.94	4.00	2.50	2.57
15.	Food Services (14)	2.67	2.35	2.90	3.15	4.00	2.08	3.14
16.	Readers (16)	3.23	3.19	3.10	3.69	3.00	2.83	3.57
17.	Interpreters (17)	3.90	3.92	3.58	4.00	4.00	4.08	4.14

	Component II: Instructional Materials, Supplies, Equipment, and Related Services	ALL	1	2	3	4	5	6
	Element and Questionnaire #							
1.	Tools and Equipment (12)	1.80	1.50	1.78	2.93	1.00	1.36	1.43
2.	A-V Materials (8)	1.86	1.71	1.68	2.71	2.50	1.36	1.43
3.	Remedial Materials (7)	1.99	1.89	1.68	2.75	3.50	1.64	1.57
4.	Individualized Inst. Modules (1)	1.88	1.56	1.63	2.94	2.50	1.73	1.29
5.	Maintenance & Repair (15)	2.07	2.04	1.90	2.38	2.00	2.25	1.71
6.	Routine Classroom Materials (11)	2.17	2.00	2.11	3.19	3.00	1.36	1.71
7.	Printed Materials (3)	2.04	1.93	1.95	2.53	3.00	1.55	1.86
8.	Electronic Aids (9)	2.10	2.00	1.90	2.75	2.00	2.00	1.71
9.	Raw Materials (10)	2.30	2.04	2.42	3.13	3.00	1.80	1.71
10.	Task Analysis of Occup. (2)	2.40	2.44	2.48	2.71	3.00	1.91	1.86
11.	Field Trips (13)	2.44	2.44	2.22	2.87	3.00	2.36	2.00
12.	Furniture & Furnishing (16)	2.50	2.42	2.26	3.07	1.50	2.46	2.57
13.	Teaching Games/Working Models (6)	2.55	2.43	2.31	3.33	3.00	2.55	1.86
14.	Minority Culture Oriented Materials (4)	2.84	2.93	2.78	3.19	4.00	2.73	1.71
15.	Contractual Services (14)	3.23	2.96	3.41	3.31	4.00	3.27	3.33
16.	Bilingual Texts (5)	3.81	4.05	3.61	4.19	3.50	3.18	3.71

	Component III: Instructional Personnel	ALL	1	2	3	4	5	6
	Element and Questionnaire #							
1.	Reg. Voc. Ed. Inst. Staff (1)	1.35	1.23	1.32	1.77	2.50	1.08	1.00
2.	Reg. Inst. Staff (2)	2.06	1.74	2.28	2.69	2.00	1.46	2.57
3.	Remedial Reading Spec. (3)	1.88	1.73	2.06	2.40	3.00	1.33	1.50
4.	Remedial Math Spec. (4)	1.90	1.80	2.06	2.36	2.50	1.27	1.57
5.	Curriculum Spec. (8)	3.04	2.76	3.39	3.25	3.50	3.42	2.14
6.	Teacher Aides (7)	2.56	2.19	2.56	2.17	3.14	3.0[illegible]	2.00
7.	Media Spec. (6)	3.05	2.90	2.83	2.57	3.50	3.5[illegible]	3.00
8.	Bilingual Spec. (5)	3.71	3.77	3.39	4.00	3.62	4.1[illegible]	3.00

TABLE IV-9
(continued)

Vocational Education Staff
Priority Rankings of Program Elements
(N=91)

		Tchrs	Coord	Couns.	Aides	Rel Tchrs	Supp. Personnel
Component IV: Instructional Related Needs	**ALL**	**1**	**2**	**3**	**4**	**5**	**6**
Element and Questionnaire #							
1. ID of Students (6)	2.37	2.60	1.95	1.88	3.50	2.64	3.17
2. Release Time for Planning (8)	1.94	1.72	2.00	2.55	3.00	1.33	2.43
3. Release Time for Student Conferences (2)	2.31	2.33	2.11	2.57	2.50	[illegible]	2.14
4. Teacher Clerical Support (7)	2.21	2.30	2.22	2.17	2.50	1.67	2.83
5. Additional Period of Employment (1)	2.35	2.45	1.94	2.47	2.50	2.17	3.00
6. Sub Teacher Pay (4)	2.50	2.23	2.37	3.15	2.50	3.00	2.00
7. Petty Cash Fund (3)	2.89	2.86	2.37	3.00	3.00	3.83	2.43
8. Monetary Reward System for Students (5)	3.41	3.48	3.56	3.12	3.50	3.50	3.29
Component V: Staff Development	**ALL**	**1**	**2**	**3**	**4**	**5**	**6**
Element and Questionnaire #							
1. Teacher In-Service (1)	2.08	2.33	1.53	2.22	1.50	2.18	2.14
2. Administrator In-Service (2)	2.47	2.57	2.32	2.44	2.50	2.64	2.43
3. Needs Assessment (3)	2.18	2.11	2.11	2.22	2.50	2.46	2.00
4. Attendance at Professional Meetings (5)	2.55	2.73	2.32	2.61	2.50	2.55	2.29
5. Visitation at Other Programs (4)	2.55	2.64	2.37	2.67	3.00	2.36	2.57
Component VI: Community Public Relations	**ALL**	**1**	**2**	**3**	**4**	**5**	**6**
Element and Questionnaire #							
1. Community/Industry Committee (1)	2.41	2.46	2.22	2.53	3.50	2.17	2.57
2. Interagency Coordinator (7)	2.57	2.65	2.24	2.56	3.50	2.83	2.33
3. Community/Industry Visitation (4)	2.53	2.67	2.13	2.78	3.00	2.17	2.83
4. Community/Industry Referral (3)	2.44	2.46	2.42	2.29	3.50	2.08	3.17
5. Labor Union Liaison (2)	3.10	3.25	3.00	2.87	4.00	2.83	3.50
6. Information Dissemination Office (6)	3.17	3.50	2.83	2.78	4.00	3.33	3.33
7. Advertising Budget (5)	3.56	3.58	3.26	3.63	2.50	3.67	4.33
Component VII: Administration & Superv.	**ALL**	**1**	**2**	**3**	**4**	**5**	**6**
Element and Questionnaire #							
1. Program Planning & Development (1)	1.73	1.66	1.61	1.72	2.00	2.00	1.85
2. Program Administration (10)	2.31	2.63	2.11	1.94	3.50	2.33	2.14
3. Program Evaluation & Research (2)	2.15	2.11	2.11	2.39	2.50	2.00	2.00
4. Staff Supervision (3)	2.60	2.70	2.28	2.89	2.50	2.75	2.00
5. Advisory Committee (4)	2.81	2.90	2.44	3.00	3.00	3.09	2.43
6. Follow-up Surveys (7)	2.45	2.47	2.32	2.53	2.00	2.58	2.43
7. Accessing Community Resources (6)	2.48	2.67	2.05	2.44	3.50	2.58	2.50
8. Community/Emp. Surveys (8)	2.43	2.48	2.16	2.50	2.50	2.50	2.57
9. Other Community PR (5)	2.81	2.96	2.56	2.94	2.50	2.83	2.57
10. Statistical Services (9)	2.92	3.04	2.89	2.88	2.00	2.91	2.86
Component VIII: Facilities	**All**	**1**	**2**	**3**	**4**	**5**	**6**
Element and Questionnaire #							
1. Shop/Lab Space (2)	1.70	1.45	2.16	2.46	1.00	1.18	1.14
2. Classroom Space (1)	1.70	1.43	1.58	2.92	1.00	1.46	1.33
3. Facilities Maintenance (5)	2.03	1.89	1.84	3.00	3.00	1.50	1.66
4. Office Space (3)	2.22	2.17	2.00	2.93	2.50	1.91	2.00
5. Learning Lab (7)	2.21	2.00	2.21	3.00	2.50	2.17	1.57
6. Curriculum Lab (6)	2.39	2.29	2.39	3.25	3.50	2.00	1.57
7. Model Environments (4)	2.29	2.00	2.53	3.00	4.50	1.64	1.83

The procedure of listing the elements provided in Table IV-9, by the mean rank for all staff and for each category of staff provides an easy reference for comparing administrator and staff ranking. The important thing to note in making this comparison is the high degree of congruence between administrator and staff ranks. Such congruence tends to emphasize the importance of these elements that received a mean rank between "1" and "2".

Guidance and Counseling was considered the most important element in Component I, Program Support Services. Other highly ranked elements included Job Placement Coordinator, Parents and Family Counseling and Diagnostic and Evaluation Services. Considered the least important were Interpreters, Readers and Student Aid. In Component II, Instructional Materials, Supplies, Equipment and Related Services, Tools and Equipment, A-V Materials, Individualized Instructional Modules and Remedial Materials were respectively considered the highest priority elements. Lowest priority elements included Bilingual Texts, Contractual Services and Minority Culture Oriented Materials.

In Component III, Instructional Personnel, Regular Vocational Education Instructional Staff was considered the most important element. Additional high priority elements included Remedial Reading Specialist and Remedial Math Specialist. Bilingual Specialist, Media Specialist and Curriculum Specialist were considered lowest priority elements.

Release Time for Planning was considered the most important element in Component IV, Instructional Related Needs; Teacher Clerical Support and Release Time for Student Conferences were other high priority elements. Monetary Reward System for Students and Petty Cash Fund were lowest priority elements.

In Component V, Staff Development, Teacher In-Service Training and Needs Assessment were respectively the highest priority elements. Visitation at Other Programs and Attendance at Professional Meetings were considered lowest priority.

Community/Industry Committee and Community/Industry Referral were ranked as top priority elements in Component VI, Community Public Relations. Advertising Budget and Information Dissemination Office were ranked as lowest priority.

Program Planning and Development was considered the highest priority element in Component VII, Administration and Supervision. Program Evaluation and Research and Program Administration were other high priority elements. Lowest priority areas were Statistical Services and other Community Public Relations.

In Component VIII, Facilities, Classroom Space and Shop/Lab Space were ranked equally as the most important elements. Curriculum Lab and Model Environments were ranked as the lowest elments.

Viewing the 78 elements inclusive, 13 achieved a mean rank between "one" and "two". Regular Vocational Education Instructional Staff from Component III was considered the highest priority element. Closely following was Guidance and Counseling in Component I. Other high priority elements included Shop/Lab Space and Classroom Space from Component VIII, Program Planning and Development from Component VII. Also, 13 elements achieved a mean rank of "three" or higher. Interpreters from Component I was the lowest ranking priority element. Other significant low priority elements included Bilingual Texts from Component II, Bilingual Specialists from Component III, Advertising Budget from Component VI, and Monetary Reward System for Students from Component IV.

Data Analysis

A series of multivariate analyses were performed in order to determine the relationship between program inputs and program outcomes. The several statistical procedures that were used were: (1) a canonical correlation relating outcomes to component costs/student for these programs which provided complete cost information; (2) a canonical correlation relating outcomes to component costs/student for those programs which provided only those costs associated with the services furnished to special needs students; (3) a discriminant analysis for all outcome variables and input variables for those programs providing complete cost information; (4) a discriminant analysis for all outcome variables and input variables for those programs providing only those costs associated with furnishing services to special needs students; (5) a multiple regression analysis relating component costs/ student and outcome measures for programs which provided complete cost information; (6) a multiple regression analysis relating component costs/student and outcome measures for programs which provided only those costs associated with furnishing services to special needs students; (7) a multiple regression analysis relating the five outcome measures with the costs/ student for each element within the eight components; and (8) a discriminant analysis for all outcome variables and all input variables utilizing the cost/student for each program element. For the discriminant analysis, a composite score derived from the five outcome measures was used as the basis for establishing groups.

Program inputs included the cost/student by components and by elements within each component. Costs were converted to per pupil expenditures in order to permit comparison of the data across programs included in the survey.

Five outcome measures were developed with which to relate the input data which had been converted to cost/student. The five outcome measures were as follows:

1. Completion by Enrollment Ratio. This ratio was derived by dividing the percentage of vocational education disadvantaged who completed the program during a given school year by percentage of vocational education disadvantaged students enrolled in the total program.
2. Drop-out Rate. This rate was determined by dividing the number of vocational education disadvantaged students who dropped out of the program by the number of vocational education disadvantaged students enrolled in the program.
3. Reclassification Rate. This rate was developed by dividing the number of vocational education disadvantaged students who, at the completion of the school year, were reclassified as "regular" vocational education students by the total number of vocational education disadvantaged students enrolled in the program.

4. Placement Rate. This rate was determined by dividing the number of vocational education disadvantaged students who were placed in employment or enrolled in a continuing education program by the total number of vocational education disadvantaged students who completed the program during the school year.

5. Follow-Up Rate. This rate was determined by dividing the number of vocational education disadvantaged students completing the program at the time of follow-up by the number of vocational education disadvantaged students completing the program. Program administrators were asked to provide follow-up data based upon a six months period following program completion. There was variance in the follow-up time periods used. Furthermore in reporting on 1974-75 completers, this data was projected, based on the previous year's experience, and current labor market conditions.

The outcome measures were combined to form a composite score for use in the discriminant analyses. The composite score was derived by summing the total of the five outcome measures. Where data were missing, the mean of the measure for the type of environment in which the program was located was substituted. For example, if a program located in SMSA Central City environment provided four of the five outcome measures but omitted the information required to develop the follow-up rate, the mean follow-up rate for all programs located in SMSA Central City environment was substituted for the missing data in order to develop the composite score. While this procedure tended to reduce the variance in the derived composite scores between surveyed programs, it was considered a reasonable solution to the missing data problem. All multivariate analyses performed and reported on below were performed on data provided in the PAQ for school year 1974-75.

The planned canonical correlation analyses were not pursued in depth due to missing data. Only ten of the 98 programs had complete information on all 13 variables. This N was judged to be of insufficient size for continued analysis.

The two discriminant analyses utilizing composite scores and component cost/student data were performed. The first, a discriminant analysis for programs supplying complete cost information was not significant (p = .476; df = 7); for the 33 valid cases utilized in this analysis, one discriminant function was derived with a Wilks Lambda value of .7807, a Chi Square value of 6.561. For the second, a discriminant analysis performed on those programs which provided only the additional costs/student necessary to furnish services to special needs students, one discriminant function was derived. The Wilks Lambda value for this function was .7797, with Chi Square = 8.834. The function derived from this analysis was not significant (p = .265; df = 7); 42 programs were involved in this analysis procedure.

The first multiple regression analysis was performed for those programs providing complete cost data while a second multiple regression was performed for those programs providing only the additional costs necessary to furnish services to special needs students. Both analyses utilized the five outcome measures and the cost/student data for the eight components. The first procedure identified only nine programs from the pool of programs that provided complete cost information which had sufficient information for analysis on all 13 variables. This N was judged insufficient for continued analysis.

The regression analysis performed on those programs which provided only that additional cost information associated with furnishing services to special needs students produced 17 programs with sufficient information on all 13 variables for continued analysis. The continued analysis produced one significant relationship. That relationship existed between the dependent variable of 1974-75 placement rate and the cost per pupil for the component of Instructional Related Needs, was significant at the .01 level, and may have been a function of the data since the N was small. The best summary of the regression analysis is to label the results inconclusive and deserving of additional attention with an expanded sample.

A third disciminant analysis was performed on the cost/student for each program element by composite outcome scores for the 31 programs reporting costs for vocational education students by element of expenditure. The analysis produced one discriminant function with a Wilks Lambda value of .0820, a Chi Square value of 36.257. This function was not significant, (p = .110; df = 27). The last discriminant analysis was performed for those programs providing only those expenses associated with providing services to special needs students by program element. Thirty programs provided sufficient information to be included in this analysis. No significant discriminant functions were found.

The final two multiple regression analyses were performed relating the average per pupil expenditure for each program element and the five outcome measures for those programs providing complete cost information and for those programs which provided only those costs associated with furnishing the special services to the special needs students. Only eight cases had complete information for inclusion in the first regression analysis and ten cases had complete information for inclusion in the second regression analysis. The small Ns made the resulting analysis suspect. The relationships that emerged are more likely a result of the particular patterns of resource utilization of those few programs that provided complete information on expenditures by element and outcomes rather than an indication of the relationship between program elements and outcome measures for the total survey sample. However, the patterns that appear to emerge may be worthy of additional research in the future.

There were recurring significant relationships between several program elements and programmatic outcomes. More specifically, the elements of individualized instructional modules, classroom space, program planning and development, guidance and counseling, job placement coordinators, work experience coordinators, administrative-clerical assistants, printed materials, electronic aids, and visitation to other programs reached significance in two or more relationships between program outcomes and expenditures. For example, for programs providing total cost/student data, the outcome measure "reclassification rate" was related to the input expenditure of guidance and counseling at the .05 level of significance. For those programs providing only costs for furnishing services to special needs students, the outcome variable "completion ratio", was found to be significantly related to individualized instructional modules at the .05 level of significance.

Because of the small N and other limitations of the data, the multiple regression analyses did not provide a statistical basis for conclusions concerning the relationships between program inputs and program outcomes.

It is noted again that the programs surveyed were selected on the basis of a high degree of success, and this criterion may account for much of the similarities and lack of statistical differentiation.

Resource Utilization Patterns: All Programs and by Type of Program Environment

Given the results of the multivariate analysis procedures and the problem of missing data, descriptive statistics are presented for all program elements for all programs and by type of program environment. These element costs/student data are displayed in Fig. IV-10, Fig. IV-11, Fig. IV-12, Fig. IV-13, and Fig. IV-14 using 2½ cycle semi-logarithmic sheets. The expenditures are presented by environment type to demonstrate the cost differentials between programs located in the four different settings. The costs per pupil are provided for each of the seventy-eight program elements. The element numbers on the figures are keyed directly to the Program Administrator Questionnaire and the listing of elements depicted in Fig. III-12, and also in Table IV-10b below. For example, I(1) refers to component I, element 1, "Guidance and Counseling"; I(2) refers to component I, element 2, "Parent and Family Counseling"; I(3) refers to component I, element 3, "Psychological Testing and Counseling"; etc.

By tracing the average cost/student through each of the environments and by all programs, the reader can get an indication of how costs to provide particular services vary by program location. For example, Guidance and Counseling, program element I(1), had a mean cost/student of $44.50 for the 38 programs reporting total expenditures for vocational education, but showed considerable variation by program environment. More specifically, the average per pupil expenditure for guidance and counseling services was $34.05 for Program Environment I, SMSA Central City; for Program Environment II, SMSA Non-Central City, the average cost/pupil expenditure for guidance and counseling services was $34.23; for Program Environment III, Urban Non-SMSA, the average per pupil expenditure was $43.98 and, for Program Environment IV, Rural, the average per pupil expenditure for guidance and counseling was $76.43.

FIG. IV-10. Resource Utilization Pattern for Vocational Education Programs Serving Disadvantaged Students: All Survey Programs Providing Total Cost Information (N=38)

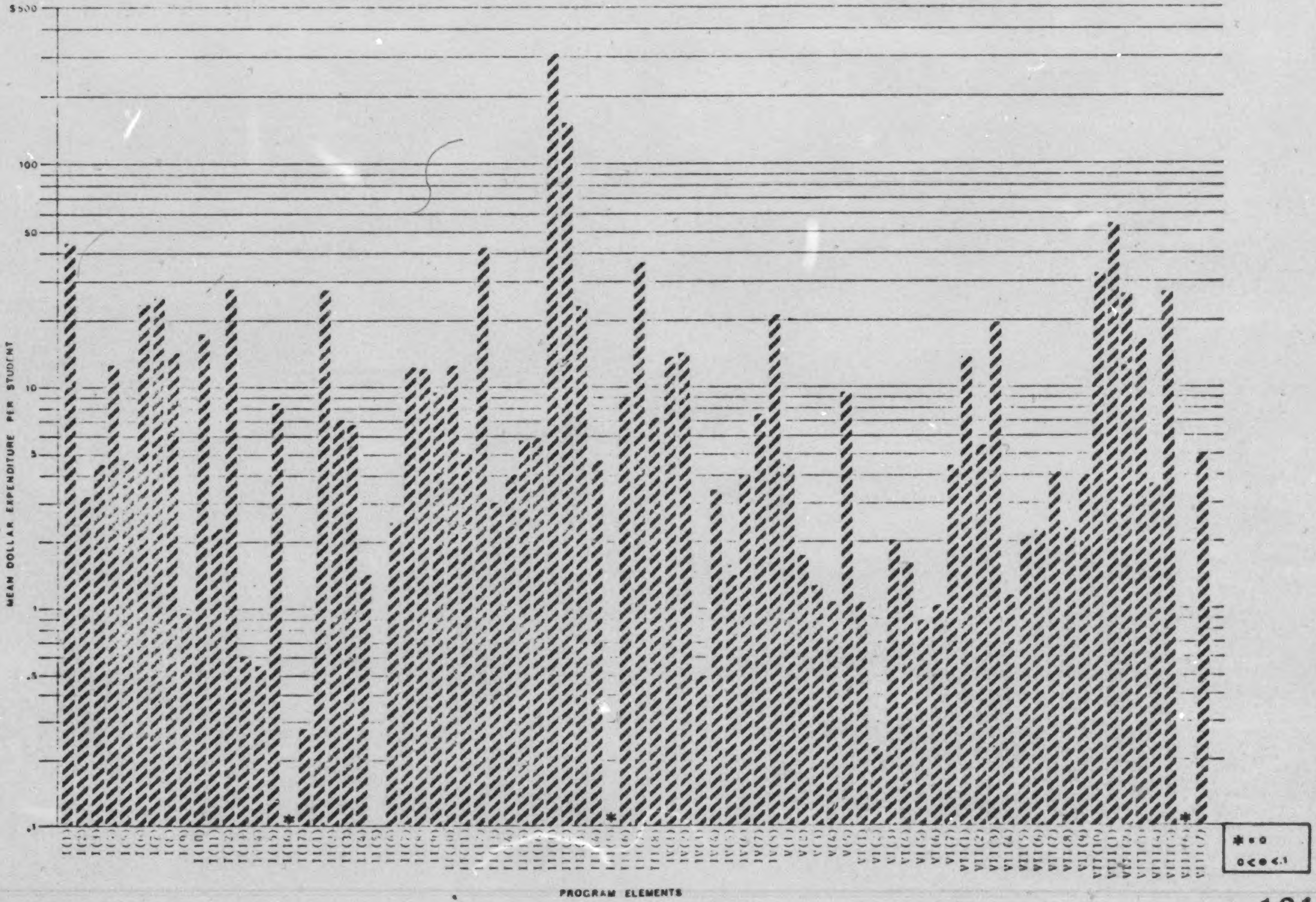

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FIG. IV-11. Resource Utilization Pattern for Vocational Education Programs Serving Disadvantaged Students: SMSA, Central City (N=12)

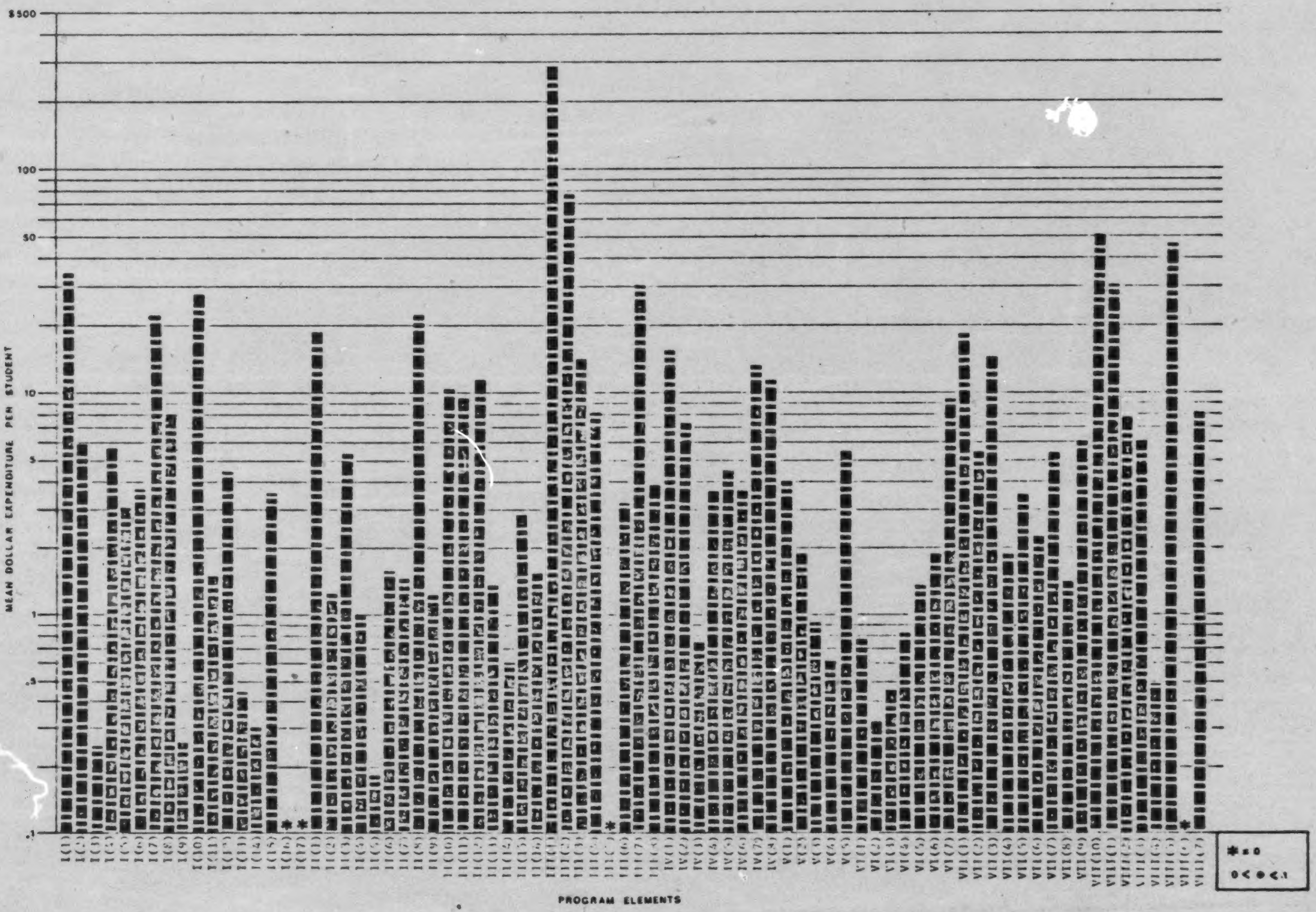

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FIG. IV-12. Resource Utilization Pattern for Vocational Education Programs Serving Disadvantaged Students: SMSA, Outside Central City (N=9)

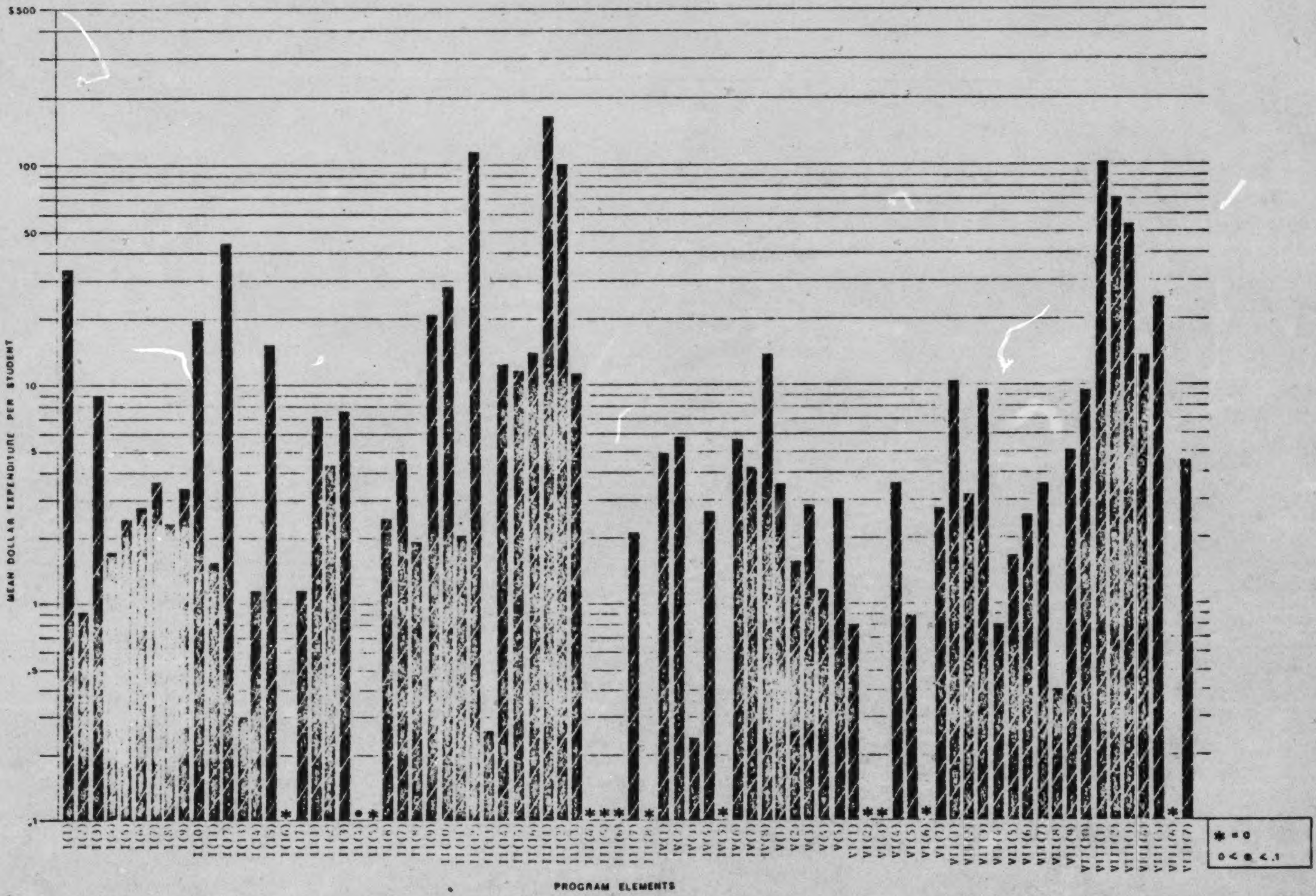

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FIG. IV-13. Resource Utilization Pattern for Vocational Education Programs Serving Disadvantaged Students: Urban, Non-SMSA (Population > 10,000) (N=9)

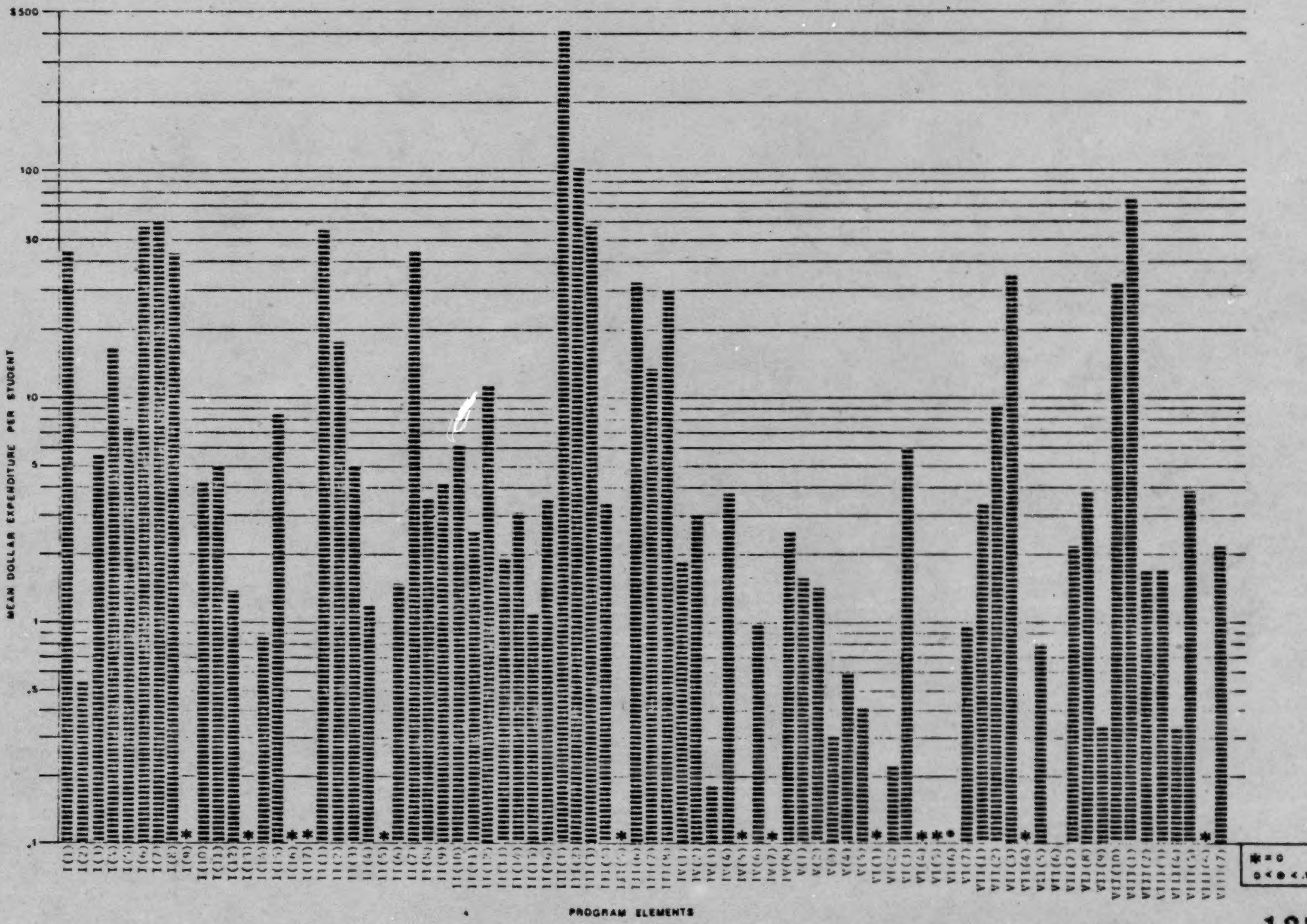
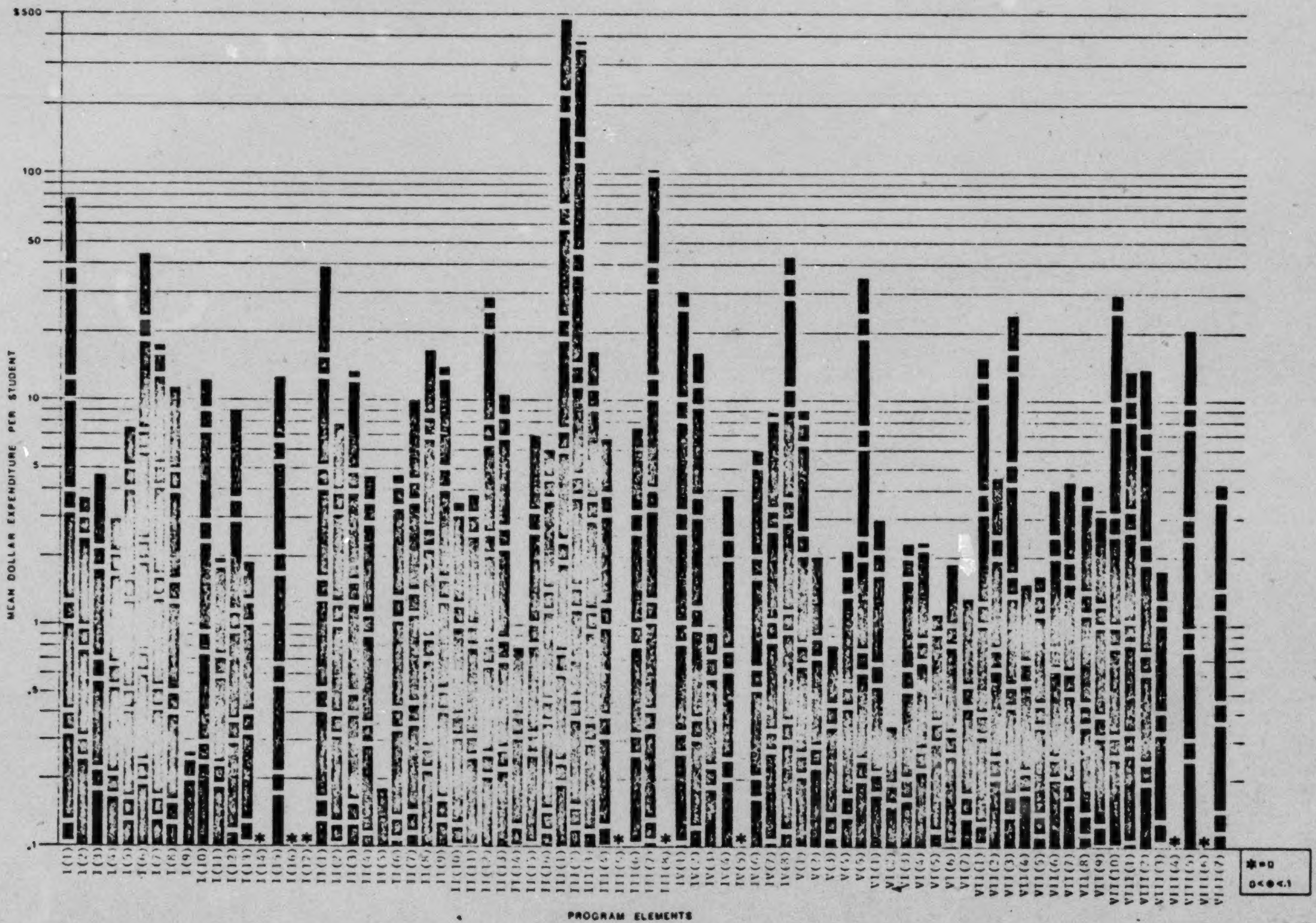


FIG. IV-14. Resource Utilization Pattern for Vocational Education Programs Serving Disadvantaged Students: Rural (Population ≤ 10,000) (N=8)



Mean total cost data for all 38 programs showed marked variability across elements as evidenced by the $0-310 range (see Fig. IV-10). The $310 mean cost was for program element III(1) Regular Vocational Instructional staff. Mean costs of zero were computed for program element I(16), Readers, program element III(5), Bilingual Specialist, and program element VIII(6), Curriculum Laboratory.

In spite of the large range, the majority of the mean costs were small. Approximately 81% fell between zero and $20. This same trend also held true for the mean cost data when computed by program environment. The majority of the mean costs fell between $0-20 for each of the four environments.

The mean costs by the four program environments showed similar trends to those of the mean cost data for all programs. The largest mean cost across all four program environments, was program element III(1), Regular Vocational Education Instructional Staff. For Program Environment I, SMSA Central City, the next three greatest mean costs, all in excess of $40, were: program element III(2), Regular Instructional Staff; program element VII(10), Program Administration; and, program element VIII(5), Facilities Maintenance Costs (Fig. IV-11). Mean costs of zero for Program Environment I were computed for program elements I(16), and I(17), Readers and Interpreters, program element III(5) Bilingual Specialist, and program element VIII(6), Curriculum Laboratory.

For Program Environment II, SMSA-Outside Central City (Fig. IV-12), the second, third, and fourth largest mean costs, each in excess of $100 were program element II(12), Tools and Equipment, program element III(2), Regular Instructional Staff, and program element VIII(1), Classroom Space. The fifth, sixth, and seventh largest mean costs, over $40, were program elements VIII(2), and VIII(3), Shop/Lab Space and Office Space, and program element I(12), Transportation Services for Students. Mean costs of zero were computed for program element I(16), Readers; program element II(5), Bilingual Texts; program elements III(4), III(5), III(6), and III(8), Remedial Math Specialist, Bilingual Specialist, Media Specialist, and Curriculum Specialist, respectively; program element IV(5), Monetary Reward System for Students; program elements VI(2), VI(3), and VI(6), Labor Union Liaison, Community-Industry Referral Service, and Information Dissemination Office, respectively; program element VIII(6), Curriculum Laboratory.

Figure IV-13 shows the second, third, fourth, and fifth largest mean costs in excess of $50 for Program Environment III, Urban Non-SMSA. These are: program element III(2), Regular Instructional Staff; program element VIII(1), Classroom Space; and, program elements I(6) and I(7), Work-experience Coordinator, and Job Placement Coordinator. The next three largest mean costs, all over $40 were program elements VIII(2) and VIII(3), Shop/Lab Space and Office Space, and program element I(1), Guidance and Counseling. Mean costs of zero were computed for program elements I(9), I(13), I(16), and I(17), Consultant Services, Student Financial Aid, Readers, and Interpreters; program element II(5), Bilingual Texts; program element III(5), Bilingual Specialist; program elements IV(5) and IV(7), Monetary Reward System for Students and Teacher Clerical Support; program elements VI(1), VI(4) and VI(5), Community/Industry Advisory Committee, Community-Industry Visitation Program, and Advertising Budget; program element VII (4), Advisory Committees; and, program element VIII(6), Curriculum Laboratory.

Program Environment IV, Rural, (Fig. IV-14) had two mean costs over $100 which were program elements III(2) and III(7), Regular Instructional Staff and Teacher Aides. The next three largest mean costs, all over $40, were program elements I(1) and I(6), Guidance and Counseling and Work-experience Coordinator; and, program element IV(8), Release Time for Planning. Mean costs of zero were computed for program elements I(14), I(16), and I(17), Food Services, Readers, and Interpreters; program elements III(5), and III(8), Bilingual Specialist and Curriculum Specialist; program element IV(5), Monetary Reward System for Students; and program elements VIII(4) and VIII(6), Model Environments and Curriculum Laboratory.

The elements that received the highest levels of funding were Regular Instruction Staff, Regular Vocational Education Instructional Staff, Guidance and Counseling, and Classroom Space. Also mentioned as high cost funding areas were Tools and Equipment, Shop Lab Space, Office Space, and Work-experience Coordinators. Mentioned once in $40 and over mean cost category across program environments were Transportation Services for students, Job Placement Coordinators, Teacher Aides, Release Time for Planning, Program Administration and Facilities Maintenance Costs. Clearly, program elements in Component III, Instructional Personnel, were the top mean cost areas across all program environments.

Elements which were not funded in any of the program environments were Readers, Bilingual Specialists, and Curriculum Laboratory. Other elements not funded in one or more of the program environments were Remedial Math Specialist, Media Specialist, Monetary Reward System for Students, Labor Union Liaison, Community-Industry Advisory Committee, Interpreters, and Food Services, and Model Environments.

From the data presented in Figures IV-10 through IV-14, it is evident that the elements of highest mean costs were in regular and vocational instructional personnel. Other areas ranking high in mean cost/student were Program Support Services such as Guidance and Counseling, and Job Placement Coordinators. Other high cost/student areas included Tools and Equipment, Teacher Aides, Release Time for Planning, Program Administration, and Facilities, especially Classroom Space, Shop/Lab Space, Office Space, and Facilities Maintenance costs.

If one were to sum the cost/student for each element by component for Figures IV-10 through IV-14, additional patterns of resource utilization emerge. These patterns are depicted in Table IV-10a, Resource Use Patterns by Component. They are classified according to environment and correspond with the cost/student by element for all 38 programs providing total cost information. While the number of cases per environment categories are too small to permit tests of significance between the means, the per pupil expenditure permits visual comparison for those programs reporting complete vocational education expenditures for vocational education disadvantaged students.

TABLE IV-10a*

Resource Use Patterns by Component for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ENVIRONMENT				
	All Cost/Student	I SMSA Central City	II SMSA Outside Central City	III Urban Non-SMSA(>10,00)	IV Rural (≤10,000)
I. Program Support Services	$ 190.26	$ 160.61	$ 157.61	$ 263.21	$ 207.26
II. Instructional Materials, Supplies, Equipment, & Related Mat.	158.63	90.37	239.80	159.71	168.38
III. Instructional Personnel	543.97	398.57	284.42	645.22	1,011.58
IV. Instructional Related Needs	66.25	60.42	38.04	61.82	110.05
V. Staff Development	18.02	12.73	12.04	4.26	49.55
VI. Community Public Relations	11.14	15.08	8.02	7.17	12.25
VII. Administration	86.87	111.26	46.83	87.21	97.21
VIII. Facilities	130.18	100.37	273.58	83.77	54.06
TOTALS	$1,205.32 (N=38)	$ 949.41 (N=12)	$1,060.54 (N=9)	$1,313.37 (N=9)	$1,710.34 (N=8)

Note: Component costs presented are per student costs.
Cost/Student/Component = Σ (cost/student/element)for each component.

* Table IV-10b provides detail costing for elements aggregated above.

Of particular note is the high cost per pupil for programs located in Rural and Urban, Non-SMSA, areas.

Table IV-10b depicts the resource use patterns by element for all programs and for those programs located in each program environment which provided complete cost information. This table presents the mean dollar figures used to construct Figures IV-10 through IV-14 and compiled in Table 10a. Table 10b permits the inspection of actual dollar figures for each element for all programs and by environment.

TABLE IV-10b

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
I. Program Support Services	Guidance and Counseling	I(1)	$ 44.56	$ 34.05	$ 34.23	$ 43.98	$ 76.43
	Parents/Family Counseling	I(2)	3.21	5.90	.92	.52	4.62
	Psychological Testing & Counseling (e.g., personal)	I(3)	4.45	.25	8.99	5.56	4.54
	Diagnostic & Evaluative Services (e.g., academic/ work adjustment)	I(4)	10.28	5.58	17.34	16.57	2.97
	Home/School Coordinator	I(5)	4.75	3.04	2.46	7.21	7.44
	Work Experience Coordinator	I(6)	23.84	3.68	2.79	57.45	44.13
	Job Placement Coordinator	I(7)	25.66	22.53	3.67	68.62	17.50
	Tutoring Services	I(8)	15.05	8.05	2.36	43.48	11.37
	Consultant Services	I(9)	.96	.26	3.39	.00	.26

TABLE IV-10b
(continued)

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
I. Program Support Services (cont)	Administrative-Clerical Assistance	I(10)	$ 17.68	$ 27.59	$ 19.78	$ 4.18	$ 12.28
	Health Services (e.g., nursing, dental care)	I(11)	2.29	1.47	1.59	4.94	1.97
	Transportation Services for Students	I(12)	27.63	43.91	45.87	1.36	8.95
	Student Fiancial Aid	I(13)	.60	.44	.30	.00	1.87
	Food Services	I(14)	.55	.30	1.17	.83	.00
	Staff Travel	I(15)	8.48	3.58	11.55	8.50	12.93
	Readers	I(16)	.00	.00	.00	.00	.00
	Interpreters	I(1[illegible]	.28	.00	1.18	.00	.00
II. Instructional Materials, etc.	Individualized Instructional Modules	II(1)	27.05	18.80	7.34	53.64	39.94

TABLE IV-10b
(continued)

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
II. Instructional Materials, etc. (cont)	Task Analysis of Occupations	II(2)	$ 7.14	$ 1.25	$ 4.36	$ 17.71	$ 7.90
	Printed Materials	II(3)	6.84	5.34	7.66	4.90	10.31
	Minority Culture Oriented Materials	II(4)	1.51	.99	.02	1.17	4.67
	Bilingual Texts	II(5)	.10	.18	.00	.00	.18
	Teaching Games/ Working Models	II(6)	2.41	1.58	2.48	1.46	4.69
	Remedial Materials	II(7)	12.64	1.44	4.66	44.78	9.98
	Audio-Visual Materials (e.g., film strips)	II(8)	12.12	22.06	1.96	3.47	16.82
	Electronic Aids (TV, overhead projectors, computers)	II(9)	9.62	1.24	21.31	4.16	14.42
	Raw Materials	II(10)	12.88	10.59	28.48	6.18	3.47

TABLE IV-10b
(continued)

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
II. Instructional Materials, etc. (cont)	Routine Classroom Materials (e.g., paper, chalk, etc.)	II(11)	$ 5.02	$ 9.36	$ 2.08	$ 2.50	$ 3.88
	Tools and Equipment	II(12)	42.61	11.26	119.51	11.26	28.82
	Field Trips	II(13)	3.02	1.33	.26	1.90	10.58
	Contractual Services	II(14)	4.03	.59	12.69	2.05	.79
	Maintenance & Repair of Equipment	II(15)	5.63	2.81	11.90	1.07	6.98
	Furniture & Furnishings	II(16)	5.99	1.55	15.05	3.48	4.96
III. Instructional Personnel	Regular Voc-Ed Instructional Staff	III(1)	310.59	259.65	170.60	406.59	481.88
	Regular Instructional Staff (general academic)	III(2)	151.91	79.02	100.40	102.88	392.10
	Remedial Reading Specialist	III(3)	23.42	14.27	11.28	56.44	16.98

TABLE IV-10b
(continued)

Resource Use Patterns by Element* for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
III. Instructional Personnel (cont)	Remedial Math Specialist	III(4)	$. 4.67	$ 8.11	$ .00	$ 3.32	$ 6.83
	Bilingual Specialist (e.g., reader, interpreter)	III(5)	.00	.00	.00	.00	.00
	Media Specialist	III(6)	9.08	3.11	.00	32.80	7.50
	Teacher Aides	III(7)	37.13	30.53	2.14	13.43	106.30
	Curriculum Specialist	III(8)	7.17	3.88	.00	29.76	.00
IV. Intructional Related Needs	Additional Period of Employment for Instructional Staff	IV(1)	13.67	15.84	4.99	1.82	30.57
	Release Time for Student Conferences	IV(2)	14.26	7.33	5.97	30.17	16.06
	Petty Cash Fund	IV(3)	.50	.64	.24	.18	.92
	Substitute Teacher Pay	IV(4)	3.43	3.60	2.69	3.69	3.77

TABLE IV-10b
(continued)

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
IV. Instructional Related Needs (cont)	Monetary Reward System for Students	IV(5)	$ 1.41	$ 4.45	$ .00	$ .00	$ .00
	Identification of Students	IV(6)	4.02	3.66	5.68	.97	6.00
	Teacher Clerical Support	IV(7)	7.39	13.01	4.29	.00	8.94
	Release Time for Planning	IV(8)	21.59	11.89	14.21	25.00	43.81
V. Staff Development	Teacher In-Service Training Programs (e.g., workshops, conferences)	V(1)	4.44	4.03	3.58	1.58	9.03
	Administrator In-Service Training Program	V(2)	1.72	1.86	1.57	1.38	2.00
	Needs Assessment of Staff (identification of staff needs)	V(3)	1.27	.92	2.83	.30	.80
	Visitation at other Programs	V(4)	1.06	.61	1.27	.59	2.11
	Attendance at Professional Meetings (e.g., travel, salaries)	V(5)	9.53	5.31	2.99	.41	35.60

TABLE IV-10b
(continued).

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
VI. Community Public Relations	Community/Industry Advisory Committee	VI(1)	$ 1.07	$ .76	$ .80	$ .00	$ 2.96
	Labor Union Laision	VI(2)	.23	.32	.00	.22	.35
	Community-Industry Referral Service	VI(3)	2.02	.45	.00	5.91	2.28
	Community-Industry Visitation Program	VI(4)	1.61	.83	3.61	.00	2.34
	Advertising Budget	VI(5)	.88	1.37	.89	.00	1.11
	Information Dissemination Office	VI(6)	1.02	1.92	.00	.09	1.89
	Interagency Coordination(e.g., Voc-Rehab, Mental Health, Courts, Employ. Off.)	VI(7)	4.32	9.44	2.77	.95	1.33
VII. Administration & Supervision	Program Planning & Development	VII(1)	13.75	18.92	10.41	3.33	19.59
	Program Evaluation & Research	VII(2)	5.47	5.53	3.20	9.15	4.61

TABLE IV-10b
(continued)

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providing Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
VII. Administration & Supervision	Staff Supervision	VII(3)	$ 19.36	$ 14.61	$ 9.58	$ 35.17	$ 24.26
	Advisory Committee	VII(4)	1.13	1.89	.80	.00	1.53
	Other Community Public Relations & Promotional Activities	VII(5)	2.09	3.51	1.68	.79	1.65
	Accessing Community Resources	VII(6)	2.21	2.29	2.57	.10	4.03
	Follow-up Surveys/ Studies	VII(7)	4.05	5.50	3.58	2.14	4.36
	Community-Employer Surveys	VII(8)	2.26	1.40	.40	3.76	4.19
	Statistical Services & Report Preparation	VII(9)	3.99	6.06	5.04	.33	3.26
	Program Administration	VII(10)	32.57	51.55	9.58	32.43	29.73
VIII. Facilities	Classroom Space	VIII(1)	55.19	31.25	102.74	74.06	13.52

TABLE IV-10b
(continued)

Resource Use Patterns by Element for All Programs and by Four Types of Program Environment for Programs Providimg Complete Cost Information

PROGRAM COMPONENT	PROGRAM ELEMENT	Notation on Fig. IV-10 thru Fig. IV-14	PROGRAM ENVIRONMENT				
			All Cost/ Student	I SMSA CC	II SMSA OCC	III Urban NonSMSA	IV Rural
VIII. Facilities	Shop/Lab Space	VIII(2)	$ 23.65	$ 7.94	$ 71.79	$ 1.66	$ 13.84
	Office Space (Instructional Administrative)	VIII(3)	16.48	6.04	55.06	1.66	1.73
	Model Environments (e.g., mobile units, greenhouse)	VIII(4)	3.66	.48	13.68	.33	.00
	Facilities Maintenance Costs	VIII(5)	26.67	46.53	25.69	3.83	20.83
	Curriculum Laboratory	VIII(6)	.00	.00	.00	.00	.00
	Learning Laboratory	VIII(7)	5.06	8.12	4.63	2.22	4.17

DEVELOPING METHODOLOGIES FOR ASSESSMENT OF UNMET NEEDS

A major objective of the proposed research was to make initial developments of a methodology that would enable vocational educators to evaluate the magnitude of the task of successfully serving vocational education disadvantaged students.

Study of the legislative history of P.L. 90-576 and the questions of House and Senate committees concerned with annual budget submissions lead to a firm conclusion that Congressional priorities and benefit-to-cost ratios are believed to be so high for the vocational education disadvantaged target populations that higher appropriations would probably be voted by the Congress if requested and justified. In essence, fund availabilities are limited only by imagination, ingenuity and drive of vocational educators on behalf of this special vocational education group. An objective of this project was to assist the vocational education profession in the complex and difficult undertaking of estimating total resource and funding needs in the first instances, and of improving the applied effectiveness of all available resources.

Three approaches were utilized in the course of the project directed toward the development of such a methodology. First, two States' information systems were examined on site to determine their potential to serve as exemplary systems for estimating needs of the vocational education disadvantaged. These two states, Illinois and Michigan, are believed to be most advanced in management information capability with respect to this special target population. Second, the Administrator Questionnaire requested information from local program administrators on methodologies used at the local level for conducting local needs assessments for vocational education disadvantaged students. Third, additional questions and information obtained from the Program Administrator Questionnaire provided estimates of unmet needs at the LEA level, which, when coupled with the analysis of program components and elements on a cost/student basis, could be projected to a national need as a crude but meaningful approximation.

Approach #1: A Review of Two States' Information Systems

In Illinois, the information system was reviewed to determine potential usefulness of the data base for (1) generating estimates of costs of services for serving disadvantaged students by school district types, and (2) generating rules of thumb for estimating the percentage of secondary enrollment who could be classified as disadvantaged in the vocational education context by school district types. Two information bases were examined: reimbursement data, and enrollment data.

The Illinois procedure for funding occupational education programs is based on the following formula:

Base Amount: This figure depends upon (1) the classification level of each course and (2) the program priority at the occupational training level (differential cost and manpower needs) which is established by the State Board. The factors that are involved in calculating dollar amounts are the following:

Factor 1: an addition to the base of 0%-80% depending on the relative financial ability of the local agency.
Factor 2: 50% of base amount for services and activities for the disadvantaged.
Factor 3: an additional 30% of base amount for programs serving two or more districts.
Factor 4: additional 30% of base amount for programs offered by an agency for the first time--initial program year.
Factor 5: 50% of base amount for services and activities for the handicapped.

State and federal funds are allocated on the basis of the above funding formula according to the type of program (occupational information, occupational orientation, occupational experience) and level of students (elementary, secondary: 9th and 10th grades, secondary: 11th and 12th grades, postsecondary and adult). Table IV-11 provides a brief description of the bases for reimbursement by program type and level of students.

Table IV-11
Basis for Reimbursement: Program by Type and Level of Students

Program by Type		Level of Students	Basis for Reimbursement
APPROVED OCCUPATIONAL INFORMATION PROGRAM		Elementary Grades - Typically K-8	Funded on number of students enrolled
APPROVED OCCUPATIONAL ORIENTATION PROGRAMS Preparing students for approved occupational training in five occupational areas: Ind. Orient. Applied Bio. & Ag. Bus., Mkt., & Mgmt. Health Personal & Public Services		Typically 9th & 10th grade . 14 and 15 years of age .	Number of students enrolled on eleventh day of classes multiplied by carnegie units of credit assigned to class. Funded at a lower rate than occupational experience programs.
APPROVED OCCUPATIONAL EXPERIENCE PROGRAMS (Classroom, laboratory, and/or on-the-job experiences.)	Secondary	Typically 11th & 12th grade. 16, 17, 18 years of age and up.	Number of students enrolled on eleventh day of classes multiplied by carnegie units of credit assigned to class. Funded at designated secondary rate
	Post-Secondary	Typically 13th & 14th grade. 18, 19, 20 years of age and up.	No. of students enrolled multiplied by the credit hours. Enrollment taken at mid-semester or mid-quarter. Funded at the designated post-secondary rate.
	Adult (courses which do not receive H.S. or college credit)	Typically those out of school who need job preparation or upgrading.	No. of students enrolled multiplied by the contact hours. Enrollment taken at third meeting of class. Funded at the designated adult rate.

Source: Division of Vocational and Technical Education, Vocational Education in Illinois: Annual Descriptive Report, July 1, 1973-June 30, 1974, Bulletin No. 33-275, p. 25.

The Illinois Division of Vocational and Technical Education (DVTE) financially supports (with State and Federal funds) the added costs incurred by a local educational agency for the provision of special services and program adaptations to help disadvantaged persons to succeed. The local agency receives the "disadvantaged" add-on-factor to the base rate of funding which is applicable to all reimbursable occupational education programs.

According to DVTE, this funding system serves to:

1) enhance the integration of disadvantaged into regular programs;
2) provides financial support to both rural and urban areas; and
3) promotes identification of and service to disadvantaged individuals rather than groups. [18/]

Actually, the way in which the funding procedure works, the determination of an individual student as disadvantaged is not made solely on the basis of individual characteristics, but on the basis of individual by course interaction. A student may be identified as disadvantaged for one course in which he/she is enrolled, but not disadvantaged in another. The financial input including the disadvantaged add-on-factor is tied to the number of Carnegie units of credit generated.

An example of how this funding procedure operates for a single course is provided in Table IV-12

[18/] Division of Vocational and Technical Education, Vocational Education in Illinois: Annual Descriptive Report, July 1, 1973-June 30,1974. Bulletin No. 33-275, p. 15.

Table IV-12

Example of DVTE Funding Procedure for A Single Course

Vocational Course	Students		
	Regular	Disadvantaged	Total
04.9901	34	10	44

	DVTE Reimbursement
44 Total students generate 22 credits	$352.00
10 Disadvantaged students generate 5 credits	15.00
	$367.00

Reimbursement per student in the course = $8.34

Reimbursement per regular student = 8.00

Reimbursement per disadvantaged student = 9.50

$8.00 x 34 = $272.00

$9.50 x 10 = 95.00

$8.34 x 44 = $367.00

In the above example, the program cost/disadvantaged student eligible for reimbursement under DVTE funding support is $9.50; the eligible reimbursement amount for added costs incurred by the local educational agency for providing program services to the disadvantaged in the example course above is $1.50/disadvantaged student.

A basic limitation to utilizing this type of cost data to generate estimates of cost of service for disadvantaged vocational education students is that the reimbursement amount represents only the federal and State share of the cost. The local share is not included. DVTE professional staff knowledgeable of the reimbursement procedures and programs for disadvantaged students indicated that the percentage that the reimbursement amount (federal and state funds) represents of the total program cost varies widely among participating school districts. For example, the reimbursement amount may represent 15% of the total program cost in one district and 30% in another. This widespread variation along with the partial cost nature of the reimbursement amount precludes use of the Reimbursement in Detail Data Tapes for estimating cost of service by school district types for program services for the disadvantaged.

None of the data provide complete estimated costs for program services for the disadvantaged.

Illinois generates "500 Series Reports" from Form No. VE-503 which provide secondary level vocational education enrollment (unduplicated) and indicates the number of disadvantaged secondary students enrolled in vocational education, also unduplicated, by participating school districts.

The information obtained from the 500 Series Reports can be supplemented with information from the Office of the Superintendent of Public Instruction giving total secondary student enrollment by school district. These combined data sources would permit the construction of a table showing, for each school district, total secondary enrollment, secondary vocational education enrollment, and secondary disadvantaged vocational education enrollment. An example of this table structure is given in Table IV-13.

Existing available information would permit completion of the data in columns 1, 3, and 4.

Information required in column 1 is available from the Office of the Superintendent of Public Instruction.

Information required in columns 3 and 4 is available from the DVTE 500 Series Reports, or can easily be computed from information included in this report series.

Information required in column 2 is not readily available by school districts. Local programs are not required by federal and state reporting systems to estimate the secondary school district population that is disadvantaged in the vocational education context (Amendments of 1968, P.L. 90-576) and therefore eligible for disadvantaged vocational education program services. Needs assessment activities of this nature depend on the initiative of local program administrators, and thus, are assumed to vary widely in terms of methodology among school districts where they exist, and be non-existent in most.

An outstanding example of a systematic needs assessment activity to identify disadvantaged students eligible for disadvantaged vocational education program services is the Alton, Illinois, Community Unit School District's Mark Sense system. This program and the identification system it has developed and operationalized is described in detail in Volume II, Compendium of Descriptions of Exemplary Programs, beginning on p. 94.

If a systematic needs assessment activity were conducted to identify the secondary school district population that is disadvantaged in the vocational education context on a school district by school district basis, and the information aggregated at the regional and state levels, then this would provide a complete data system for determining the population in need and the extent to which it is being served.

The second State which was visited and whose information system was examined in terms of its capability for assessing needs of disadvantaged students in the vocational education context was Michigan.

Table IV-13

Comparison of
Percent Secondary Vocational Education Disadvantaged Students
with
Percent Secondary Enrollment Identified as Disadvantaged

EXAMPLE TABLE

	Col. 1	Col. 2	Col. 3	Col. 4
Illinois School Districts	Total Secondary Enrollment	Percent Secondary Enrollment Identified as Disadvantaged in Voc-Ed Context	Secondary Vocational Education Enrollment	Percent Secondary Vocational Education Enrollment Disadvantaged
1				
2				
⋮				
N				
TOTALS				
		(Range of Percentages) (x̄ Percentage)	(%-age of Voc-Ed/ Total)	(Range of %) (x̄ % - age)

The basic criterion for the identification of a student for participation in a vocational education program for disadvantaged students is "inability to succeed in regular program without special assistance or service." For each individual student, there must be evidence to substantiate the conclusion that if placed in a regular vocational program, the student could not be expected to succeed without special assistance or service. The critical consideration is that the student's past achievement record indicates that it is quite probable that he would not succeed in a regular vocational program without special assistance or services. Indicators which are used to identify students include: (a) poor attendance, (b) below average past achievement in the basic education courses (1.5 or less on a 4.0 scale), (c) poor social adjustment, and/or (c) dropped out of school. In Michigan, students must be 15 and ½ years of age or older in order to enter a special needs vocational training program.[19]

Programs for disadvantaged students are funded on a project basis, submitted annually, by local educational agencies. Program costs are reimbursed 100% for segregated programs and special needs preparatory programs funded in districts designated as areas of high concentration of youth dropouts on a line item basis for expenditures incurred as a direct result of operating a program; integrated programs are eligible for added cost or per pupil allowance funding. Program components which are eligible for reimbursement include: (a) administration/coordination; (b) counseling/basic education; (c) equipment and supplies; (d) instruction; (e) clerical staff; and (f) in-service workshops.

Funding priorities for occupational preparatory programs are as follows:

1. Presently operating programs funded less than three years that met their stated performance objectives.

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[19] *Guidelines for Vocational Education Programs for Persons with Special Needs for FY 1975-76:* Disadvantaged and Handicapped Programs Unit, Vocational-Technical Education Service, Michigan Department of Education, October, 1974, pp. 1-2.

2. New programs that integrate students into the regular vocational education program.
3. Presently operating programs funded for more than three years that meet their state performance objectives and integrate students into the regular vocational education programs.
4. Programs in those local educational agencies designated by the Michigan State Plan as having a high concentration of youth dropouts.
5. In situations where funds are not sufficient to reimburse every program qualifying under a particular priority, the following procedure will be utilized: Rank order schools by criteria established in the Michigan State Plan for Vocational Education.
6. Segregated programs may be deemed feasible after it is determined that the local educational agency has shown evidence of serving persons with special needs in regular vocational education programs. Programs of this type should be designed to provide the skills necessary to enter the regular vocational education program. Minimum acceptable design for such programs must provide skilled or semi-skilled training for competitive employment. [20]

For the past two years, FY74 and FY75, a Vocational Special Needs Project Information Report (Form RE-4530), has been completed for each funded project. This report provides information on the racial/ethnic and sex composition of students served, teaching methods employed, budget detail by program component as well as total cost, and program administrator estimates of the number of potentially eligible students not being served.

This data base provides for the development of a methodology for estimating unmet needs for (a) the school districts presently being served, (b) all school districts within the State, and (c) the State as a whole. In FY74, for example, programs were operating in 364 of Michigan's 597 school districts. One hundred and nine programs served 8,160 disadvantaged students.

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[20] Ibid., pp. 3-4.

As a preliminary effort to estimate the numbers of students throughout Michigan who were eligible for disadvantaged special needs services, each local education agency, through the contact person for each special needs project, was asked to estimate the number of disadvantaged students in their area of service who were eligible. These contact persons were considered qualified to make the evaluation quoted below as they were both familiar with the special needs services and familiar with the specific definitions used for determining eligibility of these students. However, the report emphasized that:

> In any estimate of this nature some error exists. The figures provided should be interpreted as overall guides or rough orders of magnitude not having specific accuracy. They were designed to provide basic information for policy making purposes not for strict evaluation purposes.[21]

Developing information for policy making purposes is in line with the objectives of this research effort. However, one additional limitation should be pointed out. There was no standard methodology used by local program administrators in estimating the eligible vocational education disadvantaged student population. As will be pointed out and described later in this chapter, methodologies for estimating needs at the local level vary considerably.

The estimates of special needs eligible disadvantaged students provided totaled 51,000. As 8,160 of these students were being served; program administrators and coordinators estimated an additional 42,840 students were eligible for the special needs programs, but not being served.

For these reporting school districts, the estimated needs resulted in a ratio of "unserved" to "served" of 5.25. That is, for each vocational education student being served, an additional 5.25 students were potentially eligible for the program, but not being served. This is a rough estimate of unmet needs for the reporting school districts.

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[21] Evaluation Report: Michigan Vocational Education Special Needs Program, 1973-74. General Program Evaluation Unit, Research Evaluation and Assessment Services of the Michigan Dept. of Education, February, 1975, p. 15.

For those school districts not being served by a special needs disadvantaged program, projections of unmet needs could be made by grouping school districts where unmet needs have been estimated, and applying these administrator estimated ratios of served to unserved to similar groupings of school districts where unmet needs have not been estimated. For purposes of these projections, school districts could be grouped along several variables: (1) race/ethnicity, (2) size of school district, and (3) dropout rates.

Information on the racial-ethnic distribution of pupils in Michigan public schools is available from the Office of School and Community Affairs, Michigan Department of Education. For example, Table IV-14 presents the racial-ethnic distribution of pupils in all Michigan Public Schools for 1972-73 and 1973-74.

The 597 school districts could be classified on the basis of State Aid Membership, as shown in the first column of Table IV-15.

Dropout rates by school districts are available from the Research, Evaluation, and Assessment Services, Michigan Department of Education. An example of this type of data is displayed in Table IV-16, although not by school districts, primarily for illustrative purposes.

To develop Statewide estimates of vocational education disadvantaged needs, the ratios of "served" to "unserved" obtained from the 364 school districts presently served by special needs programs could be applied to the enrollment data for the remaining 233 school districts which are not served by a special needs program, following grouping of school districts on selected key variables such as the three mentioned above and matching school districts presently being served with those not being served. This methodology is illustrated in Fig. IV-15.

TABLE IV-14

RACIAL-ETHNIC DISTRIBUTION OF PUPILS IN ALL MICHIGAN PUBLIC SCHOOLS BY SCHOOL BUILDING LEVEL, 1972-73 AND 1973-74

School Year	Race of Pupils	Elementary Grades PreK-6		Junior High Grades 7-8		Senior High Grades 9-12		Other[1]		Total	
		Number	%	Number	%	Number	%	Number	%	Number	%
1972-73	White	926,840	82.2	345,230	84.6	533,462	87.6	28,288	74.7	1,833,820	84.0
	Negro	175,599	15.6	55,891	13.7	66,628	10.9	8,804	23.2	306,922	14.1
	Oriental	3,137	0.3	732	0.2	919	0.2	67	0.2	4,855	0.2
	American Indian	3,280	0.3	735	0.2	1,584	0.3	179	0.5	5,778	0.3
	Latin American	19,330	1.7	5,503	1.3	6,356	1.0	546	1.4	31,735	1.5
	Total	1,128,186	100.1	408,091	100.0	608,949	100.0	37,884	100.0	2,183,110	100.1
1973-74	White	882,837	81.7	348,145	84.2	525,433	87.4	32,611	75.6	1,789,026	83.7
	Negro	172,448	15.9	57,439	13.9	65,753	10.9	9,492	22.0	305,132	14.3
	Oriental	3,341	0.3	835	0.2	982	0.2	45	0.1	5,203	0.2
	American Indian	3,853	0.4	1,007	0.2	2,044	0.3	293	0.7	7,197	0.3
	Latin American	18,715	1.7	5,886	1.4	6,749	1.1	688	1.6	32,038	1.5
	Total	1,081,194	100.0	413,312	99.9	600,961	99.9	43,129	100.0	2,138,596	100.0

SOURCE:
Office of School and Community Affairs, Michigan Department of Education.

NOTE:
[1] Special education and any reporting unit not meeting the criteria for other categories.

Secondary Source: Michigan Educational Statistics 1974, Michigan Department of Education, December, 1974, p. 15.

TABLE IV-15

GENERAL INFORMATION BY TYPE OF SCHOOL DISTRICT FOR FISCAL YEAR ENDED JUNE 30, 1974

Classification of School District Based on State Aid Membership	Number of Districts	Number of Public School Teaching Positions	Average Salary Paid Each Teacher	Pupil Membership as of 9/28/73
(A) 50,000 and over	1	10,411	$13,928	267,742
(B) 20,000 to 49,999	10	12,670	13,717	293,906
(C) 10,000 to 19,999	20	13,137	14,155	287,223
(D) 5,000 to 9,999	67	20,820	13,148	468,844
(E) 4,500 to 4,999	12	2,506	12,917	56,259
(F) 4,000 to 4,499	22	4,174	11,859	93,367
(G) 3,500 to 3,999	23	3,702	12,755	85,596
(H) 3,000 to 3,499	28	4,009	11,858	91,076
(I) 2,500 to 2,999	33	3,747	11,592	89,097
(J) 2,000 to 2,499	67	6,593	11,559	149,434
(K) 1,500 to 1,999	63	4,878	11,239	110,518
(L) 1,000 to 1,499	71	4,004	10,906	90,112
(M) 500 to 999	78	2,752	10,616	59,489
(N) Below 500	102	751	9,922	15,212
(O) Dept. of Corrections		67	14,435	2,091
Total for all Districts ..	**597**	**94,221**	**12,852**	**2,159,966**

Source: Analysis of Michigan Public School Revenus and Expenditures, 1973-74; Bulletin 1011. Michigan Department of Education, p. 4.

TABLE IV-16

PUBLIC HIGH SCHOOL DROPOUTS IN MICHIGAN, 1962-63 THROUGH 1972-73

School Year	9-12 Grade Adjusted Public School Membership[1] (A)	9-12 Grade Public School Dropouts[2] (B)	Annual Dropout Rate ($\frac{B}{A}$ x 100)
1962-63	446.033	27,808	6.2%
1963-64	449,085	29,845	6.6%
1964-65	493,960	32,866	6.7%
1965-66	501,448	35,210	7.0%
1966-67	534.703	35,739	6.7%
1967-68	542.497	36,554	6.7%
1968-69	561,651	39,217	7.0%
1969-70	601,621	40,610	6.8%
1970-71	619,948	37,339	6.0%
1971-72	627,872	40,443	6.4%
1972-73	639.776	41,354	6.5%

SOURCE:

Public High School Dropouts in Michigan. Research, Evaluation, and Assessment Services, Michigan Department of Education

NOTES:

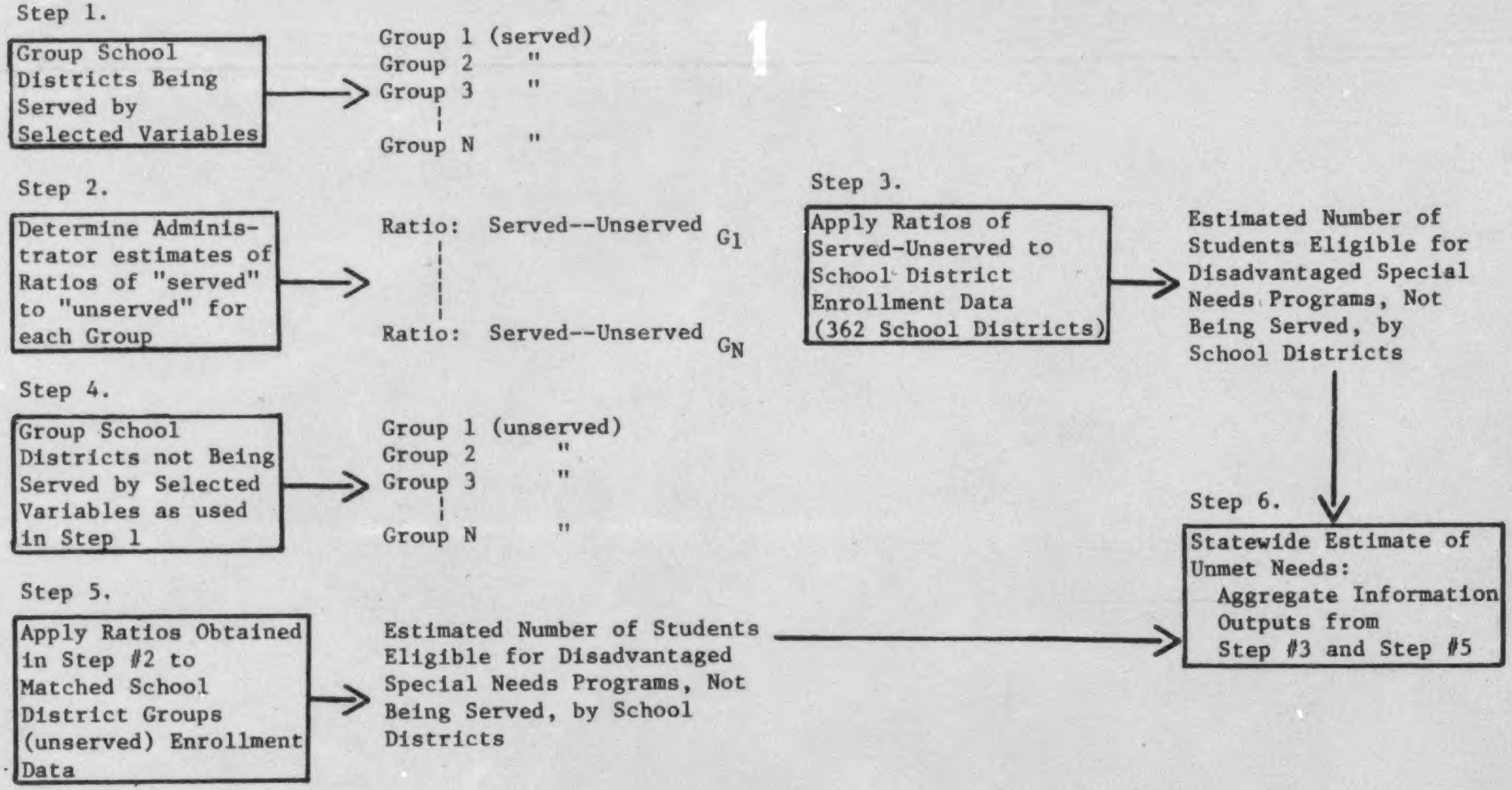
[1] *Annual Adjusted Public School Membership* figure was obtained by subtracting involuntary losses during the twelve month period covered in the survey (e.g. transfers to other schools, student deaths, illness or injury affecting attendance through the close of school, commitment to mental health institutions) from membership figures which included all students in membership on Fourth Friday Following Labor Day, plus all entries, registrations, returns, and/or transfers from other schools which occurred during the twelve month period covered in the survey.

[2] *Annual Dropouts* include all students removed from the school membership roll prior to graduation for any reason other than involuntary losses without provisions being made to transfer to another school which would provide courses leading to the completion of a high school education during the twelve month period covered in the survey.

Secondary Source: Michigan Educational Statistics 1974, Michigan Department of Education, December, 1974, p. 16.

FIGURE IV-15

Methodology for Estimating Unmet Needs at the State Level


Step 1.
Group School Districts Being Served by Selected Variables
Group 1 (served)
Group 2 "
Group 3 "
Group N "
Step 2.
Determine Administrator estimates of Ratios of "served" to "unserved" for each Group
Ratio: Served--Unserved G1
Ratio: Served--Unserved GN
Step 3.
Apply Ratios of Served-Unserved to School District Enrollment Data (362 School Districts)
Estimated Number of Students Eligible for Disadvantaged Special Needs Programs, Not Being Served, by School Districts
Step 4.
Group School Districts not Being Served by Selected Variables as used in Step 1
Group 1 (unserved)
Group 2 "
Group 3 "
Group N "
Step 5.
Apply Ratios Obtained in Step #2 to Matched School District Groups (unserved) Enrollment Data
Estimated Number of Students Eligible for Disadvantaged Special Needs Programs, Not Being Served, by School Districts
Step 6.
Statewide Estimate of Unmet Needs: Aggregate Information Outputs from Step #3 and Step #5

The proposed methodology for estimating unserved numbers of vocational education disadvantaged students for a State (Michigan) might be applicable to other states, provided that the State Education Agency and related agencies had the data production capability that exists in Michigan. An examination of each States' information system in this regard did not fall within the scope of the research project. However, project staff did explore the possibility of projecting from one State's data, available by school district, to the national level using the School District Data Tapes available from the National Center for Educational Statistics.[22/] The procedure for matching school districts would again be done on selected variables, and school districts would be grouped accordingly. Ratios of served-unserved would be applied for matched groups of school districts.

There are several limitations to this type of crude procedure for estimating unserved numbers of students. First, the data used in developing the School District Data Tapes is now over five years old. Given natural migration, neighborhood changeover, and the use of busing to achieve racial balance in schools, the assumption that the data on tape would be representative of the school districts as they now exist may not be warranted. Second, a single State or group of States would have to be identified having within their boundaries a wide mix of school district types so that adequate representation of all school districts in the United States would be assured. A large State such as Illinois or Michigan could possibly serve this purpose since they would contain varied environments (urban, rural, etc.) as settings for various sizes of school districts.

[22/] User's Manual for 1970 Census Fourth Count (Population) School District Data Tapes, National Center for Educational Statistics, U.S. Office of Education, Washington, D.C. (n.d.)

Approach #2: Methodologies Employed at the Local Level

Question 5, Section F of the Administrator Questionnaire was analyzed to identify methodologies employed in various school districts to estimate numbers of disadvantaged students, both in school and out of school, not being served. Table IV-17 presents the results of this analysis.

Table IV-17

METHODS OF ESTIMATING NUMBERS OF DISADVANTAGED STUDENTS

Response or Type of Methodology	Frequency *
No Response or Not Applicable	43
Unsubstantiated Estimates	18
Percentage of Dropouts	7
Percentage of Applicants	6
Percentage of School Population (Range 3-19%)	16
Special Survey or Program Evaluation Report	5
Analysis of School Records	5
Assistance from Community Agencies	1
Percentage of Vocational Enrollment (40%)	1
Systematic Identification System	1

* Total responses exceeds the number of questionnaires due to multiple responses by some respondents.

It is immediately obvious that no method is in very wide use. In fact, over half of the school districts sampled either gave no response or gave only unsubstantiated estimates.

By far the most common method reported was to take a proportion or percentage of some readily available number; i.e., dropouts, applicants, or school population. While the cost of applying these methods would be negligible (the counts are readily available from other reports/files), there is little reason to believe the results would be reliable or even reproducible from one school district to another. For example, dropouts are not an effect category, but represent the last statement of failure by the education system. To have a responsive program, a method should look at students who are or should be in a vocational education program.

The other class of approaches which were observed in the responses can be called analysis methods. In these, sample or universe data is examined to determine estimates of the number of disadvantaged to be served. While it is not specified, it is assumed that estimates were made by category of disadvantagement.

One approach of special note was identified which is reported to give very reliable estimates based on data from the local departments of social services, specifically, counts of Aid to Dependent Children (ADC) recipients. Estimates are made as follows for a given age range:

Total disadvantaged = 2 × number of ADC recipients
In-school disadvantaged = 0.7 × disadvantaged in grades 11 and 12
Out-of-school disadvantaged = In-school disadvantaged

How valid this set of estimating formulas would be over a wide range of economic levels would need to be determined, as would several other factors. However, since the procedure appears "to work," has some administrative acceptance, and the data is readily available, further consideration should be given to this approach and its reliability.

Another approach which merits attention is the systematic identification system involving classroom teachers and counselors developed and in operation at the Alton Community Unit School District in Alton, Illinois. This computerized system is described in detail in Volume II, Compendium of Descriptions of Exemplary Programs, beginning on page 94. Under this system, the status of each vocational education student is reviewed each semester to identify those students not succeeding in their vocational class/program. A limitation to this approach is that it only includes those students enrolled in vocational courses (73% are enrolled in vocational education courses in the Alton program). The system does not reach students enrolled in school or out of school who are potentially eligible for special needs services but not presently taking vocational courses.

Based on responses from the 98 programs included in this survey, there appears to be little effort at the local level to develop and use methodologies for assessing unmet vocational education disadvantaged needs. In only a few cases were systematic or empirically based systems in place. Understandably, for the 82 of the 98 programs which reported expenditures for program element number six in component four, "Identification of Students", the average expenditure per student was $2.34. This was true even though program administrators gave this program element a mean priority rank of 1.68 in terms of its contribution to overall program succcess.

It would appear that increasing the capacity of local programs to conduct local needs assessments is needed, and would increase the overall success of vocational education disadvantaged programs.

Approach #3: Program Administrator Estimated Unmet Needs and Costs to Serve

In Section F of the Program Administrator Questionnaire (PAQ), each local program administrator was asked to provide the following information with respect to unmet needs.

1(a) Estimated total number of vocational education disadvantaged students in school and eligible for their program, but not presently being served.

(b) Estimated average annual cost/student for identifying, recruiting, enrolling, maintaining, and successfully serving this population of students.

2(a) Estimated total number of vocational education disadvantaged students, potentially eligible for their program, but who are not now in school (e.g., expelled, voluntarily dropped out, never enrolled).

(b) Estimated average annual cost/student for identifying, recruiting, enrolling, maintaining, and successfully serving this population of students.

Responses to the above four questions have been tabulated and are presented in Table IV-18 for the four program types, and in Table IV-19 for the four types of program environment. The mean, the range of responses, and the number of cases from which the mean was derived

TABLE IV-18

ESTIMATED UNMET VOCATIONAL EDUCATION DISADVANTAGED NEEDS AND COST DATA BY PROGRAM TYPE *

	Regular/SS	Modified	Special	Wk/Experience
Estimated average total number of vocational education disadvantaged in school and eligible for program but not being served	652 Range=0-12,000 n=32	6742 Range=0-100,000 n=16	852 Range=0-4909 n=13	511 Range=0-3,000 n=19
Estimated average annual cost/student for identifying, recruiting, maintaining and successfully serving vocational education disadvantaged students in school and eligible for program but not being served	$1056 Range=98-4,000 n=30	$1204 Range=425-3,788 n=14	$1269 Range=400-2,500 n=12	$840 Range=200-2,150 n=17
Estimated average total number of vocational education disadvantaged students, potentially eligible for program but not now in school	348 Range=3-2,786 n=27	5220 Range=20-60,000 n=12	497 Range=10-3,912 n=15	532 Range=20-3,000 n=18
Estimated average annual cost/student for identifying, recruiting, enrolling and successfully serving vocational education disadvantaged students potentially eligible for program, but not now in school	$1402 Range=160-7,000 n=23	$2729 Range=650-10,000 n=8	$1709 Range=841-4,700 n=11	$1247 Range=390-5,000 n=15
Average ratio of estimated in-school students not being served to number of students served	1.24 Range=0-5.16 n=30	14.82 Range=0-177.00 n=14	4.07 Range=0-22.83 n=13	2.20 Range=0-18.52 n=19
Average ratio of estimated number of out-of-school students not being served to number of students served	2.14 Range=.03-21.29 n=25	14.08 Range=.10-106.20 n=10	2.47 Range=.12-11.18 n=15	1.83 Range=.25-6.38 n=18

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* Range is the maximum limits of estimates generated; at least one respondent in each program type stated zero unmet disadvantaged needs.

TABLE IV-19

ESTIMATED UNMET VOCATIONAL EDUCATION DISADVANTAGED NEEDS AND COST DATA FOR SURVEY PROGRAMS (N=98) BY PROGRAM ENVIRONMENT

	SMSA-CC	SMSA-OCC	Urban	Rural
Estimated average total number of vocational education disadvantaged students in school and elibible for program but not being served	4631 Range=10-100,000 n=30	273 Range=0-1,000 n=15	245 Range=0-1,500 n=18	122 Range=0-350 n=17
Estimated average annual cost/student for identifying, recruiting, enrolling, maintaining and successfully serving vocational education disadvantaged students in school and eligible for program but not being served	$1014 Range=98-4,000 n=28	$1223 Range=98-3,788 n=14	$949 Range=125-2,150 n=16	$1556 Range=219-2240 n=15
Estimated average total number of vocational education disadvantaged students, potentially eligible for program but not now in school	2818 Range=10-60,000 n=28	451 Range=20-3,000 n=13	157 Range=20-600 n=15	121 Range=3-660 n=16
Estimated average annual cost/student for identifying, recruiting, enrolling, maintaining and successfully serving vocational education disadvantaged students potentially eligible for program but not now in school	$1440 Range=275-5,000 n=23	$1788 Range=183-7,000 n=11	$1258 Range=160-2,019 n=13	$2244 Range=800-10,000 n=10
Average ratio of estimated in-school students not being served to number of students served	9.78 Range=02-176.49 n=27	1.15 Range=0-4.36 n=14	1.34 Range=0-6.45 n=13	2.60 Range=0-10 n=17
Average ratio of estimated number of out-of-school students not being served to number of students served	6.47 Range=.10-106.20 n=25	2.51 Range=.03-10.91 n=12	1.84 Range=.15-16.13 n=15	2.81 Range=21.29 n=16

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* Range is the maximum limits of estimates generated; at least one respondent in each program type stated zero unmet disadvantaged needs.

are presented. Also presented are the mean, range, and number of classes for ratios of (1) the estimated number of in-school students not being served to the number of students served (computed by dividing the estimated number by the disadvantaged enrollment for school year 1974-75) and (2) the estimated number of out-of-school students not being served (computed by dividing the estimated number by the disadvantaged student enrollment for school year 1974-75.

Detailed cost justifications were not provided; but it is believed the context in which estimates were made was such that most of the costs would be for personnel, guidance, materials and services. It is not suggested, for example, that these cost estimates include costs for construction of new facilities.

The data for all programs reporting, across program types and types of environment, is summarized below:

- Estimated total number of vocational education disadvantaged students in school and eligible for their program, but not presently being served: $\bar{X}$ = 1869; Range = 0-100,000; N = 80.
- Estimated average annual cost/student for identifying, recruiting, enrolling, maintaining and successfully serving this population of students: $\bar{X}$ = \$1,068.99; Range = \$98-\$4,000; N = 73.
- Estimated total number of vocational education disadvantaged students, potentially eligible for their programs, but who are not now in school (e.g., expelled, voluntarily dropped out, never enrolled): $\bar{X}$ = 1237; Range = 3-60,000; N = 72.
- Estimated average annual cost/student for identifying, recruiting, enrolling, maintaining, and successfully serving this population of students: $\bar{X}$ = \$1606.53; Range = \$160-\$10,000; N = 57.
- Ratio of estimated in-school students not being served to number of students served: $\bar{X}$ = 4.46; Range = 0-177; N = 76.
- Ratio of estimated number of out-of-school students not being served to number of students served: $\bar{X}$ = 3.89; Range = .03-106.2; N = 68.

The above ratios and cost data can be applied to vocational education enrollment data to generate estimates of national need. Two sets of needs information are presented. First, the two ratios are used as multipliers against the latest national enrollment statistics.[23] The resulting estimates of population in need are multiplied by the estimated cost to serve; the product is an estimate of the total dollar resources needed to meet the unmet needs of the vocational education disadvantaged. These calculations and the resulting estimates are presented in Table IV-20 for in-school students not being served and Table IV-21 for out-of-school students not being served. These figures are presented by state for ease of reference; the actual figures may vary by state because the mean ratio of served to unserved students and the estimated average cost per student to provide services fluctuates by variations in program type, enrollments served, definitions, the particular combination of program elements, and geographic requirements of the locale. More specifically, the estimated unmet needs on the national level as presented in Tables IV-20 and IV-21 do not take into account differences in numbers and costs due to population distribution and density. These can be accounted for, somewhat, by developing estimates of need for different program environments. Tables IV-19 provides estimated annual average per student cost for the four types of program environment: (1) SMSA, Central City; (2) SMSA, Outside Central City; (3) Urban, Outside SMSA, Population > 10,000; and (4) Rural, Population ≤ 10,000. The National Center for Educational Statistics, in its report on characteristics of students and staff in vocational education based on data from school year 1972-73,[24] provides estimated percentages of enrollment at the secondary level by place of residence, as shown below:

Large City	- in a large city (Pop. 100,000 or more)	15.6%
Suburb of City	- in a suburb of a large city	14.2%
Small City	- in a smaller city or town	39.9%
Rural Area	- in a rural area	29.7%
		99.4%

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[23] Vocational and Technical Education Selected Statistical Tables, Fiscal Year 1974. U.S. Office of Education. Bureau of Occupational and Adult Education, Division of Vocational and Technical Education, Washington, D.C., June, 1975.

[24] Osso, Nicholas A. Vocational Education: Characteristics of Students and Staff, 1972. National Center for Educational Statistics, U.S. Department of Health, Education, and Welfare, Office of Education. U.S. Government Printing Office, Washington, 1974, p. 92.

TABLE IV-20

National Estimates of Unmet Needs for In-School Secondary Level Vocational Education Disadvantaged Students

	Enrollment of Disadvantaged Students, Secondary Level, FY 1974 by State 1/ (Column 1)	Mean Ratio of Served to Unserved In-School 2/ (Column 2)	Estimated In-School Population in Need Secondary Level (Column 1 x 2 = 3)	Estimated Average Annual Cost per Student to Serve 3/ (Column 4)	Estimated Total Dollar Resources Needed to Serve (Column 4 x 3 = 5)
AL	19,707	4.46	87,893	$ 1068.99	$ 93,956,738
AK	4,182	4.46	18,652	1068.99	19,938,801
AZ	482	4.46	2,150	1068.99	2,298,329
AR	28,597	4.46	127,543	1068.99	136,342,192
CA	84,363	4.46	376,259	1068.99	402,217,108
CO	5,929	4.46	26,443	1068.99	28,267,303
CT	102,533	4.46	457,297	1068.99	488,845,920
DE	9,856	4.46	43,958	1068.99	46,990,662
DC	5,439	4.46	24,258	1068.99	25,931,559
FL	94,331	4.46	420,716	1068.99	449,741,197
GA	5,668	4.46	25,279	1068.99	27,022,998
HI	5,794	4.46	25,841	1068.99	27,623,771
ID	657	4.46	2,930	1068.99	3,132,141
IL	79,791	4.46	355,868	1068.99	380,419,333
IN	7,162	4.46	31,943	1068.99	34,146,748
IA	4,338	4.46	19,347	1068.99	20,681,750
KS	7,227	4.46	32,232	1068.99	34,455,686
KY	23,715	4.46	105,769	1068.99	113,066,003
LA	64,361	4.46	287,050	1068.99	306,853,580
ME	2,028	4.46	9,045	1068.99	9,669,015
MD	15,482	4.46	69,050	1068.99	73,813,760
MA	9,868	4.46	44,011	1068.99	47,047,319
MI	6,607	4.46	29,467	1068.99	31,499,928
MN	6,186	4.46	27,590	1068.99	29,493,434
MS	4,877	4.46	21,751	1068.99	23,251,601
MO	11,880	4.46	52,985	1068.99	56,640,435
MT	1,295	4.46	5,776	1068.99	6,174,486
NE	10,255	4.46	45,737	1068.99	48,892,396
NV	3,456	4.46	15,414	1068.99	16,477,412
NH	2,404	4.46	10,722	1068.99	11,461,711
NJ	24,028	4.46	107,165	1068.99	114,558,313
NM	11,312	4.46	50,452	1068.99	53,932,683
NY	154,620	4.46	689,605	1068.99	737,180,849
NC	25,806	4.46	115,095	1068.99	123,035,404
ND	6,369	4.46	28,406	1068.99	30,365,730
OH	73,606	4.46	328,283	1068.99	350,931,244
OK	11,171	4.46	49,823	1068.99	53,260,289
OR	4,072	4.46	18,161	1068.99	19,413,927
PA	25,213	4.46	112,450	1068.99	120,207,926
RI	3,559	4.46	15,873	1068.99	16,968,078
SC	7,580	4.46	33,807	1068.99	36,139,345
SD	298	4.46	1,329	1068.99	1,420,688
TN	22,451	4.46	100,131	1068.99	107,039,038
TX	59,472	4.46	265,245	1068.99	283,544,253
UT	2,451	4.46	10,931	1068.99	11,685,130
VT	1,496	4.46	6,672	1068.99	7,132,301
VA	27,030	4.46	120,554	1068.99	128,871,020
WA	10,669	4.46	47,584	1068.99	50,866,820
WV	1,706	4.46	7,609	1068.99	8,133,945
WI	8,464	4.46	37,749	1068.99	40,353,304
WY	1,644	4.46	7,332	1068.99	7,837,835
AS	230	4.46	1,026	1068.99	1,096,784
GU	287	4.46	1,280	1068.99	1,368,307
PR	50,692	4.46	226,086	1068.99	241,683,673
TT	5,004	4.46	22,318	1068.99	23,857,719
VI	119	4.46	531	1068.99	567,634
TOTAL	1,167,819	4.46	5,208,473	$ 1068.99	$ 5,567,805,552

Sources: 1/ Office of Education, Bureau of Occupational and Adult Education; Division of Vocational and Technical Education, Selected Statistical Tables, Fiscal Year 1974. June, 1975, page 43.

2/ Mean Ratios of Served to Unserved, In-School was derived from estimates provided by survey programs.

3/ Estimated Average Annual Cost per Student to Serve was derived from cost estimates provided by survey program.

TABLE IV-21

National Estimates of Unmet Needs for Out-of-School Secondary Level Vocational Education Disadvantaged Students

	Enrollment of Disadvantaged Students, Secondary Level, FY 74 by State [1] (Column 1)	Mean Ratio of Served to Un-Served, Out-of School [2] (Column 2)	Estimated Out-of School Population in Need, Secondary Level (Column 1 x 2 = 3)	Estimated Average Annual Cost per Student to Serve [3] (Column 4)	Estimated Total Dollar Resources Needed to Serve (Column 4 x 3 = 5)
AL	19,707	3.89	76,660	$ 1,606.53	$ 123,156,590
AK	4,182	3.89	16,268	1,606.53	26,135,030
AZ	482	3.89	1,875	1,606.53	3,012,244
AR	28,597	3.89	111,242	1,606.53	178,713,610
CA	84,363	3.89	328,172	1,606.53	527,218,163
CO	5,929	3.89	23,064	1,606.53	37,053,008
CT	102,533	3.89	398,853	1,606.53	640,769,310
DE	9,856	3.89	38,340	1,606.53	61,594,360
DC	5,439	3.89	21,158	1,606.53	33,990,962
FL	94,331	3.89	366,948	1,606.53	589,512,970
GA	5,668	3.89	22,049	1,606.53	35,422,380
HI	5,794	3.89	22,539	1,606.53	36,209,580
ID	657	3.89	2,556	1,606.53	4,106,291
IL	79,791	3.89	310,387	1,606.53	498,646,027
IN	7,162	3.89	27,860	1,606.53	44,757,926
IA	4,338	3.89	16,875	1,606.53	27,110,194
KS	7,227	3.89	28,113	1,606.53	45,164,378
KY	23,715	3.89	92,251	1,606.53	148,203,999
LA	64,361	3.89	250,364	1,606.53	402,217,277
ME	2,028	3.89	7,889	1,606.53	12,673,915
MD	15,482	3.89	60,225	1,606.53	96,753,269
MA	9,868	3.89	38,387	1,606.53	61,669,867
MI	6,607	3.89	25,701	1,606.53	41,289,428
MN	6,186	3.89	24,064	1,606.53	38,659,538
MS	4,877	3.89	18,972	1,606.53	30,479,087
MO	11,880	3.89	46,213	1,606.53	74,242,571
MT	1,295	3.89	5,038	1,606.53	8,093,698
NE	10,255	3.89	39,892	1,606.53	64,087,695
NV	3,456	3.89	13,444	1,606.53	21,598,189
NH	2,404	3.89	9,352	1,606.53	15,024,269
NJ	24,028	3.89	93,469	1,606.53	150,160,753
NM	11,312	3.89	44,004	1,606.53	70,693,746
NY	154,620	3.89	601,472	1,606.53	966,282,812
NC	25,806	3.89	100,385	1,606.53	161,271,514
ND	6,369	3.89	24,775	1,606.53	39,801,781
OH	73,606	3.89	286,327	1,606.53	459,992,915
OK	11,171	3.89	43,455	1,606.53	69,811,761
OR	4,072	3.89	15,840	1,606.53	25,447,435
PA	25,213	3.89	98,079	1,606.53	157,566,856
RI	3,559	3.89	13,845	1,606.53	22,242,408
SC	7,580	3.89	29,486	1,606.53	47,370,144
SD	298	3.89	1,159	1,606.53	1,861,968
TN	22,451	3.89	87,334	1,606.53	140,304,691
TX	59,472	3.89	231,346	1,606.53	371,664,289
UT	2,451	3.89	9,534	1,606.53	15,316,657
VT	1,496	3.89	5,819	1,606.53	9,348,398
VA	27,030	3.89	105,147	1,606.53	168,921,810
WA	10,669	3.89	41,502	1,606.53	66,674,208
WV	1,706	3.89	6,636	1,606.53	10,660,933
WI	8,464	3.89	32,925	1,606.53	52,895,000
WY	1,644	3.89	6,395	1,606.53	10,273,759
AS	230	3.89	895	1,606.53	1,437,844
GU	287	3.89	1,116	1,606.53	1,792,887
PR	50,692	3.89	197,192	1,606.53	316,794,864
TT	5,004	3.89	19,466	1,606.53	31,272,713
VI	119	3.89	463	1,606.53	743,823
TOTAL	1,167,819	3.89	4,542,816	$ 1,606.53	$ 7,298,170,188

Sources: [1] Office of Education, Bureau of Occupational and Adult Education; Division of Vocational and Technical Education, Selected Statistical Tables, Fiscal Year 1974. June 1975, page 43.

[2] Mean Ratios of Served to Unserved, Out-of-School was derived from estimates provided by survey programs.

[3] Estimated Average Annual Cost per Student to Serve was derived from cost estimates provided by survey programs

By using the estimated needs, cost data, and ratios of served to unserved presented in Table IV-19 by type of program environment and the enrollment distribution percentages by residence available from NCES, estimated unmet needs for in-school and out-of-school vocational education disadvantaged can be projected for the four major program environment types.

Table IV-22 presents estimated unmet needs for in-school vocational education disadvantaged students for the four types of program environment.

Table IV-23 presents estimated unmet needs for out-of-school vocational education disadvantaged students for the four types of program environment.

From the data presented in Tables IV-20 through IV-23, the total estimated resource requirements for vocational education disadvantaged unmet needs, in-school secondary level, are on the order of 3.67 to 5.56 billion dollars. The magnitude of the task to serve out-of-school vocational education disadvantaged students is estimated to be on the order of 5.7 billion to 7.3 billion dollars. Of the two sets of figures presented, the estimated needs by type of program environment are perhaps most representative since these take into account the distribution of the enrollments, and the variations in cost and unserved numbers for different environmental settings. It is noted that the mean ratios of served to unserved vary significantly among the four types of program environment. Since this factor is used as a multiplier against estimates of secondary level enrollment by area of residence, different estimates for the total estimated annual dollar resources by the four program environment types are generated. These totals are summed to arrive at the estimated unserved in-school and out-of-school vocational education disadvantaged students. The estimated unserved number of students at the secondary level, in-school, shown in Table IV-22 is 3.5 million. This represents approximately 20% of the total secondary school enrollment for School Year 75-76. The

TABLE IV-22

Estimated Unmet Needs for In-School Vocational Education Disadvantaged Students by Program Environment

	Total Enrollment, Secondary Disadvantaged Students FY 74 1/	NCES Estimated Enrollment Percentage for Comparable Area of Residence 2/	Estimated Secondary Enrollment	Mean Ratio of Served to Unserved 3/	Estimated Population in Need, Secondary Level	Estimated Average Annual Cost Per Student to Serve 4/	Estimated Total Annual Dollar Resources Needed to Serve
	(Col. 1)	(Col. 2)	(Col. =3)	(Col. 4)	(Col.4X3=5)	(Col. 6)	(Col.5X6=7)
Program Environment:							
SMSA, Central City	1,167,819	15.6%	182,180	9.78	1,781,718	$1,014.29	$1,807,178,750
SMSA, Outside Central City	1,167,819	14.2%	165,830	1.15	190,704	$1,222.71	$ 233,175,688
Urban, Non-SMSA (Pop. > 10,000)	1,167,819	39.9%	465,960	1.34	624,386	$ 948.94	$ 592,504,851
Rural (Pop. ≤ 10,000)	1,167,819	29.7%	346,842	2.60	901,789	$1,155.67	$1,042,170,494
TOTALS:	XXXXXXXX	99.4	1,160,812	XXXX	3,498,597	XXXXXXXXX	$3,675,029,783

Sources:

1/ Vocational and Technical Education Selected Statistical Tables, Fiscal Year 1974. U.S. Office of Education, Bureau of Occupational and Adult Education, Division of Vocational and Technical Education, Washington, D.C., June 1975, page 43.

2/ Osso, Nicholas A. Vocational Education: Characteristics of Students and Staff, 1972. National Center for Educational Statistics, U.S. Dept. of Health, Education, and Welfare, Office of Education. U.S. Government Printing Office, Washington, D.C., 1974, page 92.

3/ Mean Ratios of Served to Unserved for Program Environments were derived from data provided by the survey programs. See Table IV-19.

4/ Estimated Average Annual Cost per Student to Serve was derived from data provided by the survey programs. See Table IV-19.

TABLE IV-23

Estimated Unmet Needs for Out-of-School Vocational Education Disadvantaged Students by Program Environment

	Total Enrollment, Secondary Disadvantaged Students FY 74 [1]	NCES Estimated Enrollment Percentage for Comparable Area of Residence [2]	Estimated Secondary Enrollment	Mean Ratio of Served to Unserved [3]	Estimated Population in Need, Secondary Level	Estimated Average Annual Cost Per Student to Serve [4]	Estimated Total Annual Dollar Resources Needed to Serve
	(Col. 1)	(Col. 2)	(Col. 3)	(Col. 4)	(Col.3 x 4=5)	(Col. 6)	(Col. 5 x 6=7)
Program Environment:							
SMSA, Central City	1,167,819	15.6%	182,180	6.47	1,178,704	$1,439.61	$1,696,874,065
SMSA, Outside Central City	1,167,819	14.2%	165,830	2.51	416,233	$1,788.45	$ 744,411,909
Urban, Non-SMSA (Pop. > 10,000)	1,167,819	39.9%	465,960	1.84	857,366	$1,257.92	$1,078,497,839
Rural (Pop. ≤ 10,000)	1,167,819	29.7%	346,842	2.81	974,626	$2,243.50	$2,186,573,431
TOTALS:	XXXXXXXX	99.4%	1,160,812	XXXX	3,426,929	XXXXXXXXX	$5,706,357,244

Sources:

[1] Vocational and Technical Education Selected Tables, Fiscal Year 1974. U.S. Office of Education, Bureau of Occupational and Adult Education, Division of Vocational and Technical Education, Washington, D.C. June 1975, page 43.

[2] Osso, Nicholas A. Vocational Education: Characteristics of Students and Staff, 1972. National Center for Educational Statistics, U.S. Dept. of Health, Education, and Welfare, Office of Education. U.S. Government Printing Office, Washington, D.C., 1974, page 92.

[3] Mean Ratios of Served to Unserved for Program Environments were derived from data provided by the survey programs. See Table IV-19.

[4] Estimated Average Annual Cost per Student to Serve was derived from data provided by the survey programs. See Table IV-19.

out-of-school estimated unserved population at the secondary level is 3.42 million students, and would include those students who have been expelled or voluntarily dropped out of high school and are now outside of the educational system. Since this figure includes dropouts, it is likely that the age range for this particular group would be 16-21 years of age.

In summary, the total annual resources required to serve the unmet needs of in-school vocational education disadvantaged students is estimated to be in the range of 3.6 to 5.5 billion dollars; these resources are required to serve an estimated 3.4 to 4.5 million students. These figures are presented to suggest a possible range, with the lower estimates derived from types of program environments believed to be more representative of the actual unserved numbers and annual dollar resources required to serve them.

V. CONCLUSIONS

Given the goals and objectives of the research activity, the tasks and approaches devised to meet those goals and objectives, and the results achieved through the analysis of collected data, the following conclusions and recommendations, keyed to specific research objectives, are made.

RESEARCH OBJECTIVE 1: Quantify the professional, paraprofessional and other personnel, equipment, supplies, and other resources employed or consumed in vocational education disadvantaged programs which have been selected as successful, effective programs.

Conclusions

A quantification of resources used by programs in the survey was completed using a classification system of 78 program elements, grouped within eight program components.

The results of this quantification of resources, according to the categories developed, has been presented and discussed in the Data Analysis section of Chapter IV. Of special note are Figs. IV-10 through IV-14, and Tables IV-10a and IV-10b. For programs which provided complete information on vocational education expenditures for disadvantaged students, these figures and companion tables provide average expenditures by program components and program elements for all programs and by the four types of program environment. The data are illustrative of exemplary resource utilization patterns for programs which have been selected on the basis of demonstrated success and effectiveness in working with the target population.

Recommendations

The information displayed in the figures and tables referenced above should be useful to state consultants and local program administrators who wish to improve existing programs and/or plan and develop new programs for the disadvantaged in vocational education. These individuals may use these various resource utilization patterns as guidelines in reviewing and/or establishing budgetary allocation priorities associated with program efforts. Consideration should be given to those elements which received highest priority for funding, and which were common to all programs included in the survey. Also, consultants and/or administrators can relate the survey's findings of relative funding priorities with those elements which received high mean priority ranking from program administrators and/or program staff.

The data provided for the various types of program environment are believed to be particularly useful for general planning purposes. Local program administrators can match their particular environmental setting with the four types of program environments presented. For administrators involved in on-going programs, comparisons could be made between the data presented and current budgetary allocations within their own programs. This could facilitate identification of program elements that warrant increased funding. Increased funding in certain components or elements may lead to improved program outcomes. For example, if more funds were to be expended on guidance and counseling services, this could lead to higher completion rates and/or reduced dropout rates.

For local education agencies which are now planning to develop and implement vocational education programs serving disadvantaged students, the figures presented provide empirically based guidelines designed for use in establishing budgetary priorities, and in estimating total budgetary requirements to serve any number of students. The guidelines recognize cost variations of different environments. For example, if a local educational agency situated in a rural area desires to initiate a vocational education program for the disadvantaged, then the cost per student information provided in Figure IV-14 offers guidelines concerning the amount of resources and the type of resources required for a given number of rural vocational education disadvantaged students.

State personnel with responsibility for special needs programs will, it is believed, find this information particularly useful in consulting and providing technical assistance to local program administrators. The information provided should impact on decisions about the kind and degree of program elements that might best serve to increase program effectiveness; further, the information could provide assistance to local administrators with little experience in serving the disadvantaged in vocational education.

The above-referenced tables provide state personnel, for the first time, with specific information to guide the allocation of limited resources to derive optimum benefits. Given the general nature of these guidelines and the shortcomings that still remain, the resource utilization patterns identified, quantified, and displayed represent a considerable improvement over opinions, guesses, and undocumented estimates which have heretofore guided budgetary allocations in this important subject area.

RESEARCH OBJECTIVE 2: Analyze the programs selected in consultation and coordination with appropriate vocational education administrative personnel stressing classroom educator evaluations to derive patterns of resource use characteristic of success.

Conclusions

With two exceptions, project staff found during the site visit phase of the analysis methodology that teachers had little information about the entire vocational education disadvantaged program, especially in terms of enrollments, resources, unserved populations, and additional needs. All had an excellent grasp of their own teaching situation and personal needs. Difficulty in articulating and quantifying program direction and need was a common characteristic of teacher interviews. Additionally, the teachers sampled were generally unfamiliar with program cost figures although they understood quantities of resource and personnel needs, unpriced.

Recommendations

In two site visits, the teachers were at ease with the Teacher Guided Interview Questionnaire and the quantitative data associated with that questionnaire. These two programs were characterized by a high degree of shared information between administrative and teaching staffs relative to the unserved populations and the resources needed to meet the needs of these populations. Planning and program effectiveness requires information sharing and inputs from both teachers and administrators, a relatively obvious recommendation generated by the findings from this research objective.

A second recommendation is to increase the emphasis on local needs assessments, particularly as they generate "prioritization" of efforts and consensus building exercises. The portion of the Teacher Guided Interview Questionnaire that forced the surveyed teachers to prioritize elements within components not only produced useful data for the survey but also could be adapted and disseminated as a local needs assessment technique.

RESEARCH OBJECTIVE 3: Develop procedures for applying effective resource use patterns to estimate requirements in personnel, equipment, supplies, and other means for the successful vocational education of disadvantaged students.

Conclusions

In the course of conducting this research project, procedures for applying effective resource use patterns to estimate resource requirements for the successful vocational education of disadvantaged students were developed as part of the overall research plan. These procedures necessarily involved a number of key steps which would be essential for any set of procedures which would meet the requirements of this third research objective. Those essential steps include the following:

1. Identify the pool of programs for the specific target population of concern. There must be variance among those programs in terms of the degree of success they experience with respect to the goals and objectives they seek to accomplish on behalf of the target population. Individual programs within this pool must be identifiable by name, easily locatable, and subject to evaluation or assessment according to specified criteria. Finally, this pool of programs must share certain common characteristics. The most general common characteristic which they must share is that of a common target population. But in addition to this, other characteristics common to all might serve to delimit the size of the pool. For example, not only may the target population be a shared characteristic, but the age of the target population could serve to define more clearly the boundary of the pool of potential programs for study.

2. Develop a set of selection criteria for application to the pool of programs so that programs meeting or exceeding the selection criteria may be identified, extracted from the pool, and made available for further investigation. The selection criteria should necessarily be developed so that they reflect the overall goals and objectives of the program for the target population. That is, emphasis should be placed on the intended program outputs. However, this does not necessarily exclude selection criteria which are input or process oriented.

3. Apply the selection criteria to the pool of programs to identify those programs which meet or exceed the selection criteria and extract those programs for further investigation.

4. Examine the resource utilization patterns for the selected programs. Prior to the investigation, review and/or assessment of the selected programs, meaningful categories of resource use must be developed. These resource use categories permit the quantification of the various types of resources utilized within the selected programs for study.

5. Assess selected program elements for study concentrating on the quantification of resource elements used, keying on elements common to all selected programs, as well as unique uses of various types of resources which are worthy of further attention.

6. Determine resource use patterns and the dollar costs associated with them for all programs and for selected subsets of programs.

7. Apply information obtained in Step 6, i.e., resource use patterns and financial resources required, to statistical data such as the number of the target population of concern. This may include the population now being served which could be more effectively served if all of the financial resources required were available.

It may also include the number not being served, and an estimate of the financial resources required to serve this subgroup of the target population.

The set of procedures outlined above results in information useful for general planning purposes, and has implications for program administration, budget allocations, and program planning and evaluation.

Recommendations

The seven-step procedure described above and utilized in this research study has applicability at national, regional, and State levels. It is not recommended for use at the local level, or at any sub-state (multi-county or regional) level, however. This limitation is due to the necessity of having a large enough initial pool of programs (Step 1) from which to select a sufficient number of programs with effective resource use patterns.

To support OE's and the Bureau of Occupational and Adult Education's continuing responsibilities for the provision of services to the disadvantaged and handicapped in vocational education, it is recommended that this methodology for identifying effective resource utilization patterns, following appropriate refinements, be conducted on a scheduled basis and include not only secondary level programs but post-secondary and adult level programs as well. Specifically, it is suggested that research studies to identify effective resource utilization patterns concerning these special needs populations be conducted every three years in order to keep current with population and program changes and continually update the financial resource requirements involved. Further, the Bureau should encourage submissions to its Part C Research Program of modified applications of this research methodology for identifying resource use patterns and estimating resources at regional and State levels for those regions and/or States which desire to generate this type of administrative and planning information.

RESEARCH OBJECTIVE 4: Evaluate the understanding and implementation of the statute and its supporting Office of Education rules and regulations as encountered in the course of this research project.

Conclusions

Data from the State Plans Analysis and from the Program Administrator Questionnaire impact directly upon the question of the degree of understanding and implementation exercised by local program administrators relative to the statute concerning disadvantaged vocational education students and its supporting Office of Education rules and regulations. While it was noted that a number of states and local programs used non-standard categories in their definitions of vocational education disadvantaged students, the majority of states and local programs, based upon the sample, used some combination of the standard definition and non-standard categories. Taken together, 42 of the 50 states or 84.0% of the survey sample used the standard definition in some form including the possibility of additional non-standard categories.

Confusion on the part of the vocational educator between "causes" of vocational education disadvantagement and "effects" continued to exist--the poorest minority category vocational education student is not disadvantaged for vocational education purposes without the prognosis of failure. The sole criterion for any student is inability to succeed without supplementary assistance. At the local level, 14% of the administrators confused the issue while 55% of the administrators failed to provide information relative to the question. At the state level, confusion still exists as evidenced by the number of cause categories included in the definitional list drawn from the State Plans for vocational education.

It is to be noted, however, that when asked to categorize students according to the federal guidelines and definitions, local administrators in the survey were able to provide an unduplicated count of their local enrollments by such categories. Further, it should be noted that at the State level, 80% of the State Plans included an inability to succeed clause in their formal definitions.

Recommendations

Some form of information updates or administrator in-service education programs are needed relative to the current status of identification and classification of disadvantaged students, particularly in the 20% of the states where standard terminology was not used. Perhaps the development of new systems for the identification and diagnosis of vocational education disadvantaged students is an appropriate issue to address under the Part C Research Program.

RESEARCH OBJECTIVE 5: Identify problems which may be encountered in extending the more successful resource use patterns on behalf of all vocational education disadvantaged students and suggest means for eliminating or resolving problems and difficulties identified.

Conclusion #1

One pervasive problem encountered in extending the more successful resource use patterns on behalf of all vocational education disadvantaged students surfaced during the analysis of the State Plans. Data in State Plans are sparse, heterogeneous, and often inconsistent. The specific limitations encountered included the following:

a) a lack of comparability of States' data;

b) little documented evidence of details important to an evaluation of the long range planning outcomes presented in the State Plans;

c) internal inconsistencies within State Plan definitions and data which made the data suspect and therefore not reliable;

d) either a lack of information or information that could not be disaggregated; and

e) little projection or prediction activity on the part of states relative to the universe of needs, long range goals, potential of various strategies to achieve those goals or expected difficulties to be encountered in achieving vocational education disadvantaged goals.

Recommendation #1

A research study specifically addressing the one- and five-year plans for vocational education prepared on the state level could include the major specification that one end product of the analysis would be a data management system that incorporated standardized measures and estimates of enrollments, costs, and needs between states and among programs within states. Such a system would permit the translation of needs into comparable quantifiable dollar estimates and would permit the comparison of programs such that successful adaptations used in a particular program of a particular type in a particular setting could be adapted to meet the needs of another program in a similar environment and of a similar type.

Conclusion #2

The program nomination process indicated limited sharing of information among officials with responsibility for vocational education of special needs populations. That is, only 30 of the 158 nominated and selected programs were cross-referenced through the nomination process. One would have expected a greater unanimity among officials with such responsibility concerning the most successful programs in their state. This is particularly true when in several states five to seven programs were suggested by each level of the nomination process, yet only one program was cross-referenced through the four methods of nominating programs.

Recommendation #2

Closer coordination and sharing of information would seem to be indicated between local, state and federal officials with responsibility for vocational education for special needs populations. Perhaps working seminars or information updates might be two possible strategies for accomplishing such a goal.

Conclusion #3

Results of the study indicate that interagency linkages have not been developed to the fullest possible extent to provide adequate services to vocational education students. Little mention of such linkages is found in the State Plans; further, questionnaire returns indicate a limited use of local media to inform the public and to create interest, a very limited use of local business and industry for training purposes with only 48% of the respondents indicating any placement linkages with business for purposes of training, and very low percentage of reliable linkages with labor unions for purposes of either training or placement. The totals here were 8.2% of the survey respondents indicating linkages with local labor unions for purposes of training, and 10% of the respondents indicating placement linkages with local labor unions.

The concern for coordinated linkages with other agencies was voiced in the data collected on the principal in-service needs of program administrators as well. These data indicated that the second most frequently chosen category of need was to develop close relationships with other community members and professionals who work with disadvantaged vocational education students in order to establish better coordinated projects. Nineteen percent of the respondents suggested this was their critical in-service need. Further, this conclusion supports a conclusion of the GAO report of December 31, 1974, entitled, "What Is The Role of Federal Assistance For Vocational Education?" Specifically, the authors of the GAO report suggest that,

> Delivery of vocational education could be improved if all available training resources in the area to be served were taken into account in the planning process. Public education agencies should explore potential sharing of other resources in the community--particularly employer sites--and take steps to maximize the utilization of their own facilities.[25/]

The data gathered during the course of the survey support the conclusions of the GAO report and suggest that local administrators have become aware of the problems and have begun to ask for help in seeking solutions to the difficulty.

[25/] What Is The Role of Federal Assistance For Vocational Education? Report to the Congress by the Comptroller General of the United States. Washington, D.C.: U.S. General Accounting Office, December 31, 1974, p.65.

Recommendation #3

Several pilot projects and/or a research study focused on developing an inventory of possible relationships, establishing the protocol necessary to develop such relationships, suggesting the barriers and the potential strategies for overcoming the barriers involved in the process of establishing such relationships would be a great benefit. Such studies would generate information which could impact directly on vocational education at the local level and assist in providing more adequate direct services to vocational education disadvantaged students.

Conclusion #4

Perhaps the most critical result of the research activity directed at Research Objective 5, the identification of problems which may be encountered in extending the more successful resource use patterns on behalf of all vocational education disadvantaged students, is the dearth of data on the existing population who are eligible for such vocational training yet not being served in existing programs. This population includes those students presently enrolled in school and not being served and those students presently not enrolled in the schools and not being served. The analysis of State Plans indicated that very few states generated projections of need for vocational education disadvantaged students; further, those that did project some estimate of need rarely disaggregated the data such that the need was quantifiable by level in order to define resource needs for appropriate services for each level.

The bibliographic search produced no inclusive systems that could be utilized for purposes of projecting a national level of need when based on the formal definition as provided in the Office of Education's Guidelines for Identifying, Classifying and Serving the Disadvantaged and Handicapped Under the Vocational Education Amendments of 1968. Further, the systems that project staff discovered in the field during the course of the survey were not suitable for extrapolation on a national level. More critically, the data that were available from each state were not comparable in such a fashion that aggregation would permit projection of need in terms of a raw estimate of the population upon a national level.

Recommendation #4

A comprehensive data management system including various options should be developed for State and local use on an optional basis. Such a system could produce completely comparable data.

RESEARCH OBJECTIVE 6: Summarize findings for making assistance to the disadvantaged in vocational education programs more effective, including a discussion of the adequacy of the 15% set-aside funds.

In summary, the major products of the research project are as follows:

a) The quantification by program component and program element of resource utilization patterns derived from an assessment and examination of effective programs.

b) Program administrator and vocational education staff priority rankings of program components and elements in terms of their contribution to the overall success of vocational education programs for the disadvantaged.

c) A seven step set of procedures has been developed and applied to programs selected on the basis of their success and effectiveness to identify resource utilization patterns. Further, these resource use patterns have been applied to estimates of unserved populations both in school and out of school who are potentially eligible for special needs vocational education disadvantaged programs. From these estimates, annual resource requirements have been calculated to indicate the magnitude of the vocational education disadvantaged requirement.

d) Information has been obtained from administrators and other vocational education practitioners to serve as the basis for an evaluation of the understanding and implementation of the statute (P.L. 90-576).

e) An examination and discussion of problems in extending effective resource use patterns.

Resource Use Patterns

Effective resource utilization patterns derived from programs selected for study in this research project on the basis of their demonstrated effectiveness and success have been quantified according to 78 program elements grouped into eight program components. The resource utilization patterns derived have been documented, displayed, and discussed in

Chapter 4, "Results," in Figs. IV-10 through IV-14 and Tables IV-10a and IV-10b. These resource utilization patterns may serve as useful guidelines to State personnel responsible for the implementation of special needs programs for the disadvantaged, and also to local program administrators. The pattern formats were designed to be useful in evaluating existing on-going programs, and in planning for local areas in which new programs are being considered. The tables provide critical information for budgetary adjustments and allocation of limited resources most likely to result in achievement of desired program goals and objectives.

It is noted that the "vocational education disadvantaged" students are evidencing program completion rates, and job placement rates that compare favorably with the rates of "vocational education regular" students.

Program Element Rankings

The priority rankings of program components and elements by program administrators in the survey project supplement the resource utilization patterns described above. The local program administrators participating in these rankings were administrators of programs identified on the basis of their success and effectiveness. Therefore, it is believed that these mean priority rankings aggregate the best thinking now available on program strategies which have proved most successful in working with the vocational education disadvantaged population.

The mean priority rankings for components and elements obtained from program administrators have been presented and discussed in Chapter 4, "Results." In addition to priority rankings obtained from program administrators, additional rankings were also obtained from vocational education professional staff serving in positions which bring them in direct, day-to-day contact with the disadvantaged vocational education population. Mean priority rankings of program elements were obtained from these vocational education practitioners and have been displayed and discussed in Chapter 4, "Results."

There is significant uniformity in all rankings, regardless of personnel position perspective.

Procedure for Estimating Unmet Needs

A methodology was developed involving a seven step procedure for applying resource use patterns derived from identified successful programs to estimate requirements at the national level to meet the unmet needs of the vocational education disadvantaged. The unmet needs included not only estimates of the unserved number of students both in school and out of school, but also the total annual resource requirements (expressed in dollars) concerning these students. These findings have been presented and discussed in Tables IV-20 through IV-22 in Chapter 4, "Results." Considering the estimated total annual resource requirements which were generated from the application of this procedure, it is appropriate to comment on the adequacy of the 15% set-aside funds, Vocational Education Amendments of 1968, Part B, for the disadvantaged population.

Estimates of unmet needs, including population and total annual resource requirements, derived from this research project are far greater than current numbers of students served and current federal, State and local expenditures.

According to the latest statistics on vocational education available from the Office of Education,[26] secondary level enrollment of disadvantaged persons was 1,167,819; the total enrollment for all vocational education disadvantaged levels (secondary, post-secondary and adult) was 1,612,168 in FY 1974. Secondary level enrollment in vocational education under Part A, Section 102(b) was 102,863 students.[27] Total enrollment in vocational education at the secondary level was 8,433,750.[28] Secondary disadvantaged enrollment comprised 13.8% of total secondary enrollment.

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[26] Vocational and Technical Education Selected Statistical Tables, FY 1974: Vocational Education Information No. III. Washington, D.C.: U.S. Department of Health, Education and Welfare, Office of Education, Bureau of Occupational and Adult Education, Office of Adult Education, Technical and Manpower Education, Division of Vocational and Technical Education, June 1975, p. 43.

[27] Ibid., p. 41. These students reside in target areas selected because of high unemployment rates.

[28] Ibid., p. 26.

This project's estimate of unmet needs in terms of number of students unserved but potentially eligible for vocational education disadvantaged programs was derived from the survey of program administrators. The figures range from 3.5 million to 5.2 million for in-school students, and an additional 3.4 million to 4.5 million out-of-school youth and young adults (ages 16-21). The in-school estimate of unserved numbers represents 20% - 33% of all secondary (grades 9-12) school students in the nation.

Total vocational education expenditures for the disadvantaged under all programs totaled $306,466,143. Of this total, $100,496,705 was federal, and $205,969,438 was State and local.[30] The $306,466,143 consisted of $215,193,176 (Federal: $66,479,410 and State/local: $148,713,966) under Part B, Vocational Education Amendments of 1968[31]; $7,144,230 (Federal: $3,439,886 and State/local: $3,704,344) for student compensation under Part H, Work Study programs primarily benefiting the economically disadvantaged[32]; and, $32,200,231 (Federal: $22,402,613 and State/local: $9,678,618) under Part A, Section 102(b) Disadvantaged.[33] The gross methodology applied in this project resulted in estimates of total annual resource requirements to serve the in-school population

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[29] Projected enrollment for secondary level, public and non-public, grades 9-12 for school year 1975-76 is 15,700,000; and for public schools, secondary enrollment, grades 9-12 for school year 1975-76 is 14,400,000. Frankel, Martin M. and Deamer, J. Fred, Projections of Educational Statistics to 1982-83, 1973 Edition. Washington, D.C.: U.S. Government Printing Office, National Center for Educational Statistics, Office of Education, 1974, DHEW Publication No. (OE)74-11105.

[30] Vocational and Technical Education Selected Statistical Tables, FY 1974: Vocational Education Information No. III. Washington, D.C.: U.S. Department of Health, Education and Welfare, Office of Education, Bureau of Occupational and Adult Education, Office of Adult Education, Technical and Manpower Education, Division of Vocational and Technical Education, June 1975, p. 16.

[31] Ibid., p. 8.

[32] Ibid., p. 15.

[33] Ibid., p. 3.

ranging from $3.67 billion to $5.57 billion; and an estimate range for the out-of-school population from $5.7 billion to $7.3 billion. Compared to current expenditure levels (FY 1974), the resources required to meet these unmet needs (expressed in dollars) is on the order of 10 to 18 times more for the in-school population, and 18 to 23 times as much for the out-of-school population.

The reader's initial reaction to these estimates may be one of regarding them as suspiciously high. However, when viewed in context with appropriation levels of other federal legislation in the manpower training area or education of special populations, the estimates demand attention, for they represent crude, but nevertheless meaningful estimates.

For example, CETA obligations for FY75 totaled $2.25 billion. Conceptually, had these same funds been expended during earlier years of an individual's life cycle, the nation's need for CETA-type programs would diminish.

Costs of overcoming handicaps of all kinds are high. Authorizations for Senate 6 (now P.L. 94-142, following the President's signing on November 29, 1975), the "Education for All Handicapped Children Act," will reach a $3.16 billion level in Fiscal 1982.

Studies done for the Department of Defense have estimated that 50,000 army personnel with vocational skills are absorbed annually by U.S. industry and that this transfer of army vocational skills to the civilian sector has a value of $1 billion. The $1 billion total training cost divided by the 50,000 personnel equates to an investment of $20,000 per student.[34/]

[34/] Testimony before the Subcommittee on Elementary, Secondary, and Vocational Education, Committee on Education and Labor, House of Representatives, 94th Cong., 1st Sess., H.R. 19 and Related Bills. Major General George W. Putnam, Jr., Director of Military Personnel and Management, Department of the Army, p. 1084.

Costs per Job Corps enrollee average $7,000 (approximately) per enrollee man year.[35] This number is several times higher than the costs estimated for serving the vocational education disadvantaged, as derived from the estimates provided to this survey.

Comparative estimates are also available for the unmet needs estimates calculated by type of program environment. The National Advisory Council on Vocational Education held hearings in five major urban centers across the country in 1973-74. Based on findings from these hearings, NACVE's Co-chairman, Committee on Legislation, recommended a crash funding program of $1 billion to $2 billion of "direct aid to the large cities with the highest concentration of unskilled labor."[36] The target area for this recommended funding is comparable to program environment type I: SMSA, Central City, for which derived estimates of unmet needs were $1.8 billion for in-school students, and $1.7 billion for out-of-school youth and adults.

Representatives of the National Federation of Urban-Suburban School Districts, an organization of approximately 23 school systems which enroll about 5% of all children attending public schools of the nation, testified before the Subcommittee on Elementary, Secondary, and Vocational Education of the House Committee on Education and Labor. Statistics from Federation member schools indicated that 18%-20% of the students who had entered the ninth grade do not finish high school. Some leave school because of economic hardships. They advocated that expansion of vocational education work study programs and cooperative work experience programs would help resolve this problem. Statistics of the Federation member school systems showed that cooperative work programs are the single most successful method of vocational education. From 75% to 90% of cooperative work experience graduates are successfully placed. Many retain the positions they held while in the program, but at a higher pay rate after leaving school. It was emphasized that a very strong feeling of the Federation was that 60% of the secondary school students of the nation should be enrolled in vocational education.[37]

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[35] Testimony of William H. Kolberg, Assistant Secretary for Manpower Administration, Department of Labor, Subcommittee of the Committee on Appropriations, House of Representatives, 93rd Cong., 2d Sess., Subcommittee of Department of Health, Education and Welfare Appropriations, 1974, p. 79.

[36] Statement of Honorable Roman Pucinski, Co-chairman, Committee on Legislation, National Advisory Council on Vocational Education. Hearings before the Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor, House of Representatives, 94th Cong. 1st Sess., H.R. 19 and Related Bills, Vol. 2, pp. 1198-99.

It is an obvious conclusion that the 15% vocational education disadvantaged set-aside funds are inadequate, given the magnitude of the task as estimated and the current allotments for Part B, Vocational Education Amendments of 1968. The crucial question is administrative/legislative programming including the appropriation of funds necessary for (a) vocational education to adequately serve the disadvantaged versus (b) incurring the social and economic costs of failing to achieve the meaningful vocational education goals already established as Congressional policy and purpose.

Understanding of the Statute

Study findings indicate that there is growing awareness among vocational education practitioners of the legislative intent of P.L. 90-576, the Vocational Education Amendments of 1968, with respect to the utilization of the 15% set aside funds for the disadvantaged.

The term "disadvantaged" as defined in the statute is unique for vocational education. When used in a vocational education context, the word "disadvantaged" is legally and administratively distinct from all other Office of Education and other governmental programs using this descriptor. Confusion and misunderstanding are facilitated by an identical term describing different programs. This unusual target population is essentially limited only by the criterion of not succeeding in vocational education. The unique requirements of the statute provide opportunities for vocational educators, but have proven difficult to communicate and even more difficult to administer. Local directors increasingly used and understood such necessary language as the inability to succeed criterion.

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[37] Ibid., pp. 1057-1060.

However, enough confusion still exists on the issue of cause and effect to merit attention and concern. Widespread usage of the standard disadvantaged effect categories was found, but almost 20% of the states failed to categorize their disadvantaged populations on the basis of these primary effect categories.

While the Office of Education has given encouragement for innovative programs for this target population through its guidelines, documents and related materials, the extent of experimentation with innovative procedures and practices has been limited. Sufficient flexibility has been attached to the 15% set aside funds to permit the utilization of a wide variety of techniques, strategies, and services to assist the disadvantaged to overcome their inability to succeed in "regular" vocational education programs. It is the impression of project staff, however, that local program administrators have been wedded closely to traditional vocational education programming, and have been unwilling to initiate innovative non-traditional approaches to serving the disadvantaged population. A possible reason for this is the desire for initial acceptance of special needs programs by regular vocational educators. Program administrators of disadvantaged programs have been cautious in their approach to innovation and experimentation, fearing the potential for alienation and/or isolation of their programs and students from the regular vocational education programs.

Extending Effective Resource Use Patterns

Results of the survey indicate several important problems in extending effective resource use patterns including the following:

1. the lack of comparable data collected by State education agencies;
2. insufficient coordinated linkages with other community agencies who share a responsibility for serving students who are classified as vocational education disadvantaged;
3. the seeming neglect of long range planning that aims to quantify the specific population in need of services, and the specific types of resources needed to serve that population;
4. less sharing of information among agencies and individuals with the responsibility for vocational education for special needs populations than might be expected in an optimum situation; and,

5. delays in allocation of resources to generate and collect comparable data on program inputs, processes and outcomes that would permit evaluation of specific expenditures when compared to specific outcomes in order to identify those areas of expenditure which produce desired outcomes on a cost-effective basis.

This research effort and others funded in the FY 74 Vocational Education Research Program which placed priority on the disadvantaged in vocational education will undoubtedly result in informative data and planning information. The various research products are expected to provide data on specific program inputs and processes, and their relationship to program outcomes which should assist vocational education practitioners in better meeting the needs of the disadvantaged.

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The following comments are made as overall general impressions of the project staff as a result of the research effort and the issues which have been addressed.

First, it is obvious that the numbers of disadvantaged vocational education students are far greater than initially envisioned by the Congress, and that the level of expenditures necessary to assist these students to succeed in vocational education are far greater than suggested by the 15% set aside percentage.

Second, the outcome information reported by the 98 programs in this survey indicate that significant success is being achieved on behalf of this target population. Particularly noteworthy are the completion rates, placement rates, and reduced dropout rates which compare favorably with the regular vocational education students enrolled in these programs. While the sample programs were selected on the basis of their demonstrated effectiveness and success, and may not be representative of success of all programmatic efforts on behalf of vocational education disadvantaged, they do indicate that when levels of expenditures are equal to the magnitude of the task, success with this target population can be achieved.

Third, relatively little is known about the resource utilization patterns required, including types and level of resources which are necessary to achieve success with this target population. The opportunity for realizing significant payoffs for dollars invested is recognized.

Fourth, vocational education disadvantaged expenditures derived from this survey of programs are lower on a per student basis in comparison with other types of manpower training programs, especially those which attempt to serve the disadvantaged individual later in his life cycle, and after he has left the traditional educational system.

Fifth, it is important to note that any evaluation of these programs must keep in mind the pioneering educational aspect of the vocational education disadvantaged legislation, which contains specific requirements to overcome a student's inability to succeed. No other major part of the educational institution is vested with the charge to insure educational success on behalf of students exhibiting a prognosis of failure or inability to succeed without special help. In fact, other elements of the educational system have been generally criticized for deliberately "failing" or "pushing out" marginal students with little or no regard for the societal consequences of their actions.

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APPENDIX A

ISSUE ORIENTED SEMINAR ONE: 8 October 1974
ISSUE ORIENTED SEMINAR TWO: 13-15 November 1974

Summary
of
Vocational Education Seminar
on
Disadvantaged and Handicapped

8 October 1974

DVER Project #V0135VZ
"Assessment of Need in Programs of Vocational Education
for the Disadvantaged and Handicapped"

Suggested agenda items:

Rules of thumb and justification for estimating disadvantaged needs in rural and urban environments.

Defining program elements to be included in a "successful" vocational education program for the disadvantaged and handicapped.

Effective administrative arrangements for implementing "successful" vocational education programs for the disadvantaged and handicapped.

Invited participants:

Mr. James Little
Vocational Director
East St. Louis School System
240 North 6th Street
East St. Louis, Illinois 52201

Dr. Walter M. Arnold
Seminar Chairperson, and
President,
Arnold Associates, Inc.
Arlington, Virginia

Dr. Bryan V. Fluck, Director
Admiral Peary Area Vocational-Technical School
Ebensburg, Pennsylvania 15391

Mr. James W. Smith, Coordinator
Special Programs Unit
Division of Vocational and Technical Education
State Board of Vocational Education and Rehabilitation
Town and Country Towers
1035 Outer Park Drive
Springfield, Illinois 62706

APPENDIX A-1

Report on First Vocational Education Seminar

On Tuesday, October 8, 1974, the first of SSI's "Issue Oriented Seminars on Need Assessment for the Disadvantaged" was convened at the National Airport Holiday Inn in Washington, D.C. This seminar, chaired by Dr. Walter M. Arnold, addressed the issues of (a) external factors such as economic climate which affect the level of success of vocational educational programs; (b) effective administrative arrangements for implementing successful vocational education programs for the disadvantaged and handicapped; (c) rules of thumb and justification for estimating disadvantaged needs in rural and urban environments; and (d) the enumeration of essential program elements included in successful vocational education programs for the disadvantaged and handicapped.

Presenters for the first seminar included Dr. Arnold, Arnold Associates, Inc., Arlington, Virginia; Dr. Bryan V. Fluck, Director of the Admiral Peary Area Vocational Technical School of Ebensburg, Pennsylvania; Mr. James W. Smith, Coordinator of the Special Programs Unit for the State Board of Vocational Education and Rehabilitation in Illinois; and Mr. James Little, Vocational Director for the East St. Louis school system, East St. Louis, Illinois. Other participants in the seminar included Ms. Barbara H. Kemp, Ms. Velma R. Brawner, and Dr. Bettina Weary, each from the Office of Education and members of the OE-SSI Project Advisory Committee. Additionally, Dr. Edgar A. Parsons, Mr. Jim Hughes, and Mr. Eric Rice participated in the seminar as representatives of System Sciences, Inc.

Dr. Arnold set the tone for the day's discussion in his presentation of community economic aspects and their relationship to level of success in programs for the disadvantaged and the handicapped. During the course of his presentation, the group generated four points which take the form of very tentative recommendations. (1) Regular and special vocational education programs should make labor market surveys for the particular geographic region in which they are located. This is particularly important since 80% to 85% of the students graduating from such programs find their first job within ten miles of their home. An additional 10% of these students find a job within 50 miles of their home; only 5% of average vocational education graduates find a job outside this radius. Additionally, those moving more than 50 miles away are usually the more highly skilled and more upwardly mobile students. (2) Vocational education programs key their offerings to the particular economy of their geographic region. This took a slightly different tone than the prior recommendation because it suggested that the vocational education program itself must convince the local public that it is an economic asset, that it is far cheaper to train students while they are in school than to create a community training program or to have them on welfare; further, this requires that curricular offerings be keyed to the local labor market. Placement becomes less of a concern because supply and demand are coordinated; additionally, this program keeps the training and the money in the area. (3) Programs establish follow-up guidance services in the form of continuing institutional research to judge the relative success of their graduates. (4) Vocational education projects investigate the possibility that they might become the coordinator of various social service programs in their area, particularly in rural areas that may not have the social services so closely at hand.

Following Dr. Arnold's presentation, James Little and James Smith addressed the issue of effective administrative arrangements for implementing successful vocational education programs for the disadvantaged and the handicapped.

Little, a local director, particularly emphasized his role as facilitator in spurring community involvement in vocational education for the disadvantaged and the handicapped in East St. Louis. There they have managed to establish advisory councils of local citizens for each area of vocational training that they offer in their high schools. Additionally, they have negotiated a contract with the local community college to provide continuing education for these students in their particular area. Furthermore, they incorporate the disadvantaged and handicapped students directly into these programs by emphasizing cooperative work situations and remedial education.

A second point that Little emphasized was the importance given to the notion of socialization within their program of vocational education for the disadvantaged and handicapped. They contend that the lack of socialization is the major problem that must be addressed in dealing with the disadvantaged population. In fact, he argued that the majority of their graduates who are dismissed from jobs in their community are fired because of a failure to practice socially accepted middle class standards of behavior. The implications of Little's remarks, which again form tentative recommendations, are that successful programs must take into consideration community citizenry in terms of their involvement, and the socialization needs of their own students in order to establish successful programs.

James Smith next addressed administrative arrangements for programs for the disadvantaged and handicapped in vocational education at the state level. He noted that Illinois uses a unique system to disperse their mandated funds; specifically, Illinois uses the student credit base which means that local programs are reimbursed on a student per class basis, with weighting factors affecting the amount of reimbursement provided for disadvantaged and handicapped students enrolled in vocational education classes. In Illinois, each local district has to submit a one- and a five-year plan for vocational education, including the plans for disadvantaged and handicapped. These plans are created with the help of a state consultant and are submitted to a regional director who serves as supervisor, insuring compliance to state rules and regulations. These plans, in conjunction with the number of students taught by particular vocational education programs, supply the information necessary to provide and adjust funds for LEA's. However, these two provisions taken together do not insure that local units develop operational programs that move beyond mere statements of compliance in dealing with vocational education for the disadvantaged and the handicapped. Therefore, one of the recommendations that grew out of Mr. Smith's presentation is that plans at all levels--local, State, and national--should be written such that they do comply with the law, and that they include a highly operational component. A second recommendation growing out of Mr. Smith's presentation is that local education agencies should sponsor third party evaluation of their vocational education programs for the disadvantaged and handicapped in order to find out the relative success, effectiveness, and improvements that are necessary for that particular program. A third recommendation growing out of Mr. Smith's presentation is that local, regional, and State educational units must consider strategies to improve the instruction of their practicing teachers, particularly in areas that will help them cope with exceptional children in vocational education programs.

Dr. Fluck's presentation on curriculum concluded the formal agenda for the seminar. It is Dr. Fluck's contention that through curriculum development, disadvantaged and handicapped students can be served effectively in regular vocational education programs. Specifically, he argues that by developing a series of individualized instructional packages geared to competencies which each student is expected to have at the completion of his program, any student can make acceptable progress toward completion of his training goal. Level of competency and time (length of instruction) are the two key variables which are allowed to vary within the program, so that individual needs can be met. In supporting this contention, Dr. Fluck presented a vast array of curricular materials that they have developed at the Admiral Peary Area Vocational and Technical School. Additionally, he suggested anecdotal evidence demonstrating that special education students in many instances were no longer identifiable among the students in their regular vocational education program. The dual recommendations growing out of this particular part of Dr. Fluck's presentation are (1) that individualized instructional curriculum development become a central focus of programs for the disadvantaged and the handicapped, and (2) that any program for the disadvantaged and the handicapped must have an accompanying in-service education program in curriculum development for instructional staff. The third recommendation growing out of Dr. Fluck's overall presentation is that he, too, argues that an industrial economic survey not only of the local area, but also of state and national dimension must be conducted in order to check (1) the skills that people are required to have in order to be employed in the area, (2) the manpower needs in terms of future jobs in the area, and (3) to match those two items to the development of your own vocational education programs particularly for the disadvantaged and handicapped.

Economic Aspects to be Considered in the Determination of Successful Programs for the Disadvantaged and Handicapped

by

Walter M. Arnold

The general economic situation and climate of a locality or area is of the utmost importance to any educational program which is designed to improve the status of the residents, especially to a program which has an employment objective. Similarly, an educational program, particularly an occupational educational program should be or become an asset to the economy of an area or locality.

In general, there is likely to be substantial difference in the make-up, progress and achievement of programs for the disadvantaged and the handicapped in a rural economy as against a program in an urban environment. It has been reported that although the number of disadvantaged persons from an economic standpoint are far greater in an urban center, the severity of the disadvantages in a rural area are far more acute.

Obviously, the employment opportunities in a growing and prosperous economy would be more plentiful than in a depressed area of reclining growth with high unemployment. Assuming that one of the measures of a program for the disadvantaged should be the job placement record of those who participated, the availability of appropriate jobs would be of considerable importance. If there was considerable out-migration of younger people from a low economic area, the placement record of students might not be good because of the inability of the disadvantaged to migrate readily to where there were jobs available. Of course, a record of placement would be meaningful as a measure of success only when the disadvantaged are of an employable age.

The relative level of the economy of a locality would also probably determine the kind and extent of social services and perhaps the educational program services in the community. It would be reasonable to assume that the lack of relative wealth in a community and its ability to expend public funds for programs and services would tend to limit the various social services that could be of considerable assistance in making programs for the disadvantaged more effective.

Further aspects of the economy such as the attractiveness of a local area to potential new or expanding industries and businesses would have a bearing on its economic level and growth and hence its ability to pay. Considerations such as land availability, proximity to customers, special requirements, raw materials, rivers and lakes (water supply), transportation service and cost advantages, community utilities, educational and cultural activities, labor quantity and quality and labor cost advantage all would contribute to or detract from the economic level of the community.

In a similar manner, the attractiveness of industry and business to a community would also have a bearing on its economic climate. This economic aspect would take into account such factors as average hourly earnings, stability, growth rate in terms of employment and value of shipments, capital investment per employee, and value of product added per worker.

In summary, it could be concluded that a program for the disadvantaged and handicapped would have more and better chances for success in various ways in the more favorable climate of a higher level of economy than in a depressed economic climate. All of this suggests that in the examination of programs for the disadvantaged to determine their relative success, the economic aspects surrounding the site of the program should be taken into account both in selecting the criteria to be used and in the final measurement of the degree of success.

Other considerations would have an impact on the economy such as population projections and trends by age groups, the nature and extent of employment and unemployment, projected employment opportunities, and poverty conditions in terms of size of families and family incomes. Two other aspects of community life that are related importantly to the socio-economic structure which are likely to influence the economy are (1) the employers' attitudes, opinions, cooperation and participation in community activities, and (2) the level of educational attainment of males and females and the extent of functional illiteracy.

Basic Elements of a Successful Vocational Program for Disadvantaged and Handicapped Students

by

James E. Little

The greater the pace of change in the world today, the more urgent it becomes for us to develop efficiency in the way that people learn.

To respond to this need, our curriculum in the East St. Louis Public Schools has been refocused to make special provisions for a large percentage of our student population: the disadvantaged and the handicapped.

I. Definition of Terms

The Vocational Education Amendments of 1968 define disadvantaged persons as those "who have academic, socioeconomic, cultural or other handicaps which prevent them from succeeding in vocational education or consumer and homemaking programs designed for persons without such handicaps, and who for that reason require specially designed educational programs or related services." This federal legislation required that new methods for meeting individual needs of the disadvantaged people be provided.

II. Assessment of the Disadvantaged and Handicapped

The use of paper and pencil tests for the purpose of assessing the abilities, aptitudes, interests, and personality dimensions of children and youth is a subject of considerable controversy. Its two major "myths" are discussed by Barry and Wolfe (1962. p. 26-27).

> ..... first, that various facets of human personality can be accurately and definitively expressed in terms of numbers; and second, that those numbers have implications for the individual's success in various educational and vocational enterprises ... Tests are being used for purposes that were never intended, with groups for whom they are unsuitable, and in ways that are antagonistic to the best principles of measurement. Currently many testing experts are inveighing against these abuses and warning that tests are useful tools only so long as their users recognize their limitations as well as their advantages.

Testing culturally different individuals appears to have disadvantages which outweigh advantages. "A test should be considered for what it is--a single, isolated sample of behavior, which outside of the Latin-American's cultural context can be of little value in and of itself" (Pollack & Menacher, 1971, p. 59). In short, disadvantaged youngsters do poorly on tests in large part because their socioeconomic conditions and/or subcultures have not prepared them to take tests. They may not read well enough to understand the test items, and/or they may perceive the matter of testing as irrelevant to their lives (Vontress, 1971). To avoid belaboring the point, suffice it to say that the literature is replete with research data which demonstrate that culturally different students perform less well than most WASP children. This being true, there is little reason for continuing to administer tests to such persons.

It is imperative that individuals who persist in believing that tests may provide important diagnostic information answer two questions prior to administering tests: "What information is needed to assist the child in school experiences or preparation in making an occupational choice?" and "What evaluation methods can I use to gather such data?" (Cappelluzzo, 1971).

It is probable that the type of data required for career-planning and decision-making can be gleaned from sources other than normative-based tests. The important principles to keep in mind with respect to assessment are (1) that the measurement process should take into account as many possible aspects of a child's background and current characteristics as possible, (2) that it should provide him with maximum opportunity to demonstrate his abilities, and (3) that it should guard against premature labeling or categorization which tend to result from overemphasis on test scores (Goslin, 1967). Ebel (1970. p. 233) offers four principles which should be applied to school testing programs. They are equally appropriate for career guidance.

1. Emphasize the use of tests to improve status and deemphasize their use to determine status.
2. Broaden the base of achievements tested in order to recognize and develop the wide variety of talents needed in our society.
3. Share test results openly with the persons most directly concerned. Include all that the tests have revealed about students' abilities and prospects.

4. Decrease the use of tests to impose decisions on others and, instead, increase their use as a basis for better personal decision-making.

III. Curriculum Materials for Disadvantaged

Effective teaching of disadvantaged youth requires a high degree of teacher insight into the backgrounds and characteristics of students. These conditions and characteristics will vary from city to city and even within cities (Feck, 1971). Local guidance counselors, city and county government offices, health departments, welfare agencies, and census data are sources of specific localized information.

Many environmental and family characteristics have adverse effects on disadvantaged youth and contribute to their educational impairment. (Kuvlesky, et al., 1969.) Affected are their attitudes, physical and mental health, and educational and occupational aspirations and achievements. Some selected characteristics follow (Feck, 1971).

1. A view of society is often held which is limited by the immediate family and neighborhood.
2. Struggle for survival is a major objective.
3. Behavior is often sanctioned which would be viewed as immoral in the society at large.
4. Unstable family situations result in insecurity, aggresiveness, and delinquency.
5. Immediate gratification assumes precedence over later wellbeing.
6. A negative self-image often results from frequent failures.
7. Corporal punishment is prevalent, although youth are often not closely supervised.
8. High academic and occupational aspirations are usually not encouraged or reinforced.
9. Life styles provide little opportunity to develop the ability to cope with the verbal and the abstract, which schools frequently use.
10. Feelings are openly and frankly expressed.
11. Delinquency aids acceptance by peers.
12. Without successfully employed work models, few opportunities are available to develop an understanding of available careers.

The instructional materials required to respond to the various needs of the disadvantaged can be successful only if appropriately applied to the specific needs for which they were designed. Since needs vary widely among students, so must the instructional materials. The need for individualized instruction becomes increasingly acute as the degree of disadvantagement increases.

IV. Instructional Staff

A competent and cooperative staff is paramount to the success of any instructional endeavor. This is even more so true in teaching the disadvantaged and the handicapped. Since the process of education is primarily social, it will involve interaction of various instructional personnel and learners. Teachers must possess the ability to get along with all kinds of people. In addition to subject skills, they must be innovative and flexible.

Among the instructional staff the non-teaching chores of departmental head, curriculum committee, evaluation committee and materials committees; all of these tasks must be performed by the instructional staff.

V. Support Personnel

Vocational Guidance Services
Remedial English and Math Instructors
Placement Services
Follow-up Services
Cooperative Education Coordinators
Employment Service
Manpower Training
Advisory Board members

VI. Materials and Facilities Management

A sound resource management plan is essential to good education. Learning environments cannot continue to be suited to changing career education needs unless they are managed according to plan. An orderly procedure for management of materials and facilities requires:

1. Assessment of current and predicted material needs
2. Sound fiscal planning

3. Simplification of practices
4. Maximum facility utilization.

A materials and facilities management policy can be determined by analysis of guidelines set forth by various controlling bodies. Federal, state, district, and building policies suggest procedures for managing materials and facilities. The features which are most related to facilities management are: (a) long-term vocational program goals, (b) the level of vocational programs and (c) specific learning experience objectives.

Clear and concise understanding of goals and activities at respective vocational education levels in the total program enable the vocational director to develop the following:

1. Ongoing and accurate inventory systems
2. Preventive maintenance programs
3. Budget systems
4. Requisition and purchase policies
5. Facility arrangement and utilization plans.

Conclusion

Curriculum and instructional materials used in instructional programs for the disadvantaged will be successful only if specifically selected or prepared to meet the need of those who are to be served, and then only if the learner perceive these materials as meeting their needs. Instruction should be individualized to the greatest possible extent.

Teachers must communicate an honest and sincere expectation that their students will succeed. It is is also essential for instruction to be practical and basic in nature. Classroom instructional units based upon shop, laboratory, job or home experiences of students will help correlate student interest to the curriculum. Learning by doing is often considered the best teaching method with disadvantaged individuals, as well as with advantaged.

Materials should be in keeping with the reading and interest level of students. Use of visual material where possible, and written material with no complicated language will increase student comprehension.

Materials need to be adapted to the culture of the disadvantaged student. Curriculum materials must communicate; therefore, it is necessary that the materials reflect the language, environment, and experiences of the student.

The instructional program should be functionally rooted in the community. Community representatives from business, industry, health services, crafts and trades, other labor groups and public agencies should be consulted about what needs to be included in the curriculum. It is equally important to keep students thoroughly informed about the job market (what jobs are available, where, and how to qualify).

The needs of the disadvantaged are complex; curriculum and instructional materials are only a part of the total resources required to enable the disadvantaged to succeed within the school environment as well as in the working world.

References to this paper may be obtained by writing directly to the author.

Effective Administrative Arrangements for Implementing "Successful" Vocational Education Programs for Disadvantaged and Handicapped Persons

by

James W. Smith

Since 1963, vocational educators at the state and local levels have become increasingly involved in the complex problems of providing vocational education for disadvantaged and handicapped persons. The Vocational Education Act of 1963 emphasized the need for serving students with special needs and state departments of vocational education began to identify staff with responsibilities for development and administration of programs for this target group. However, progress was minimal until the Vocational Education Amendments of 1968 mandated that a portion of a state's allotment of federal funds be used for vocational education of disadvantaged and handicapped persons. Additional funds for vocational education for disadvantaged persons were authorized in a special section of the federal act. Coping with this mandated responsibility has created a variety of administrative arrangements at the state level and in local educational agencies.

State Commitment

The state program of occupational education for disadvantaged and handicapped persons in Illinois involves some administrative arrangements that are somewhat complex but have the potential to make positive and lasting impact on local educational agency (LEA) programs. The Illinois program is based on the premise that (1) disadvantaged and handicapped persons in rural as well as urban areas should be assisted in successfully preparing for and entering into wage earning employment, and (2) to the extent feasible, disadvantaged and handicapped persons should be full participants in regular vocational education programs. The administrative procedures and policies established in FY 1970 to utilize federal and state funds for support of local educational agency occupational education programs have been conducive to implementing the two basic premises or concepts.

Local educational agencies are encouraged to enroll disadvantaged and handicapped students in regular occupational programs and resort to special classes or programs only when absolutely necessary. The administration of local programs in a manner that will result in support from vocational education funds is described in the Division of Vocational and Technical Education (DVTE) Bulletin 40-273, "Occupational Education for Disadvantaged and Handicapped Persons." DVTE has held regional workshops for LEA administrators in an attempt to facilitate the development of local programs and clarify administrative procedures. DVTE staff consultant services are available when requested by LEA personnel.

Articulation of programs and services through the elementary, secondary, post-secondary and adult level educational agencies in local communities is extremely important. DVTE uses state and federal funds to support programs at all these levels and is increasingly involved in promoting interaction and cooperation between community educational agencies so that articulation of programs and services that benefit disadvantaged and handicapped persons can be accomplished.

Local Educational Agency Involvement

Local public education agencies in Illinois annually submit a one and five-year plan for occupational education to DVTE. The plan is reviewed by a DVTE regional director and recommended to the state director for his approval.

Included in the local one and five-year plan is a description of how disadvantaged and handicapped persons are identified and the programs and services provided for them. The identification of these individuals must be based on the following conditions:

- Individuals, not groups, are identified.
- The individual is not succeeding or cannot be expected to succeed in a regular occupational program.
- The individual's disability is a contributing factor to his lack of success.
- The individual is identified by the effect, not the cause, of his disadvantagement or handicap.

The programs and services described must relate to assisting the students to cope with particular disadvantagements or handicapping conditions so that they may participate successfully in occupational education programs.

Identifying and treating special needs of individuals draws upon the expertise of ancillary LEA personnel such as psychologists, social workers, counselors, special education teachers, and other agencies such as the Division of Vocational Rehabilitation and Department of Mental Health. Effective administration of local programs will facilitate enlisting all such available services that may contribute to assisting the occupational education teacher to help the disadvantaged or handicapped student prepare for the world of work.

Funding

Funding is based on student credits or credit hours earned in approved occupational programs. The LEA claim for funding support indicates the actual number of student credits and credit hours earned in approved occupational programs, identifying the number earned by disadvantaged and handicapped persons. Differentiated funding occurs by applying various add-on factors to the base amount of funds per student credit or credit hour.

Up to an additional 50% of the dollar amount of funding per credit or credit hour is granted for those earned by disadvantaged and handicapped persons. LEA administrators are advised to claim these extra funds only when they have documented evidence of costs incurred for special services and programs for these persons. This is a matter of fiscal audit of LEA programs by DVTE.

It is possible for public secondary schools in Illinois to receive financial assistance from several state agencies concerned with occupational education for handicapped persons. Through DVTE, the Division of Vocational Rehabilitation, and Office of the Superintendent of Public Instruction, special education administrative arrangements for services and financial support for LEA programs have been developed to eliminate duplication of agency efforts. For the convenience of LEA administrators the three state agencies have developed and printed a publication identifying the resources available to LEAs.

Programs at State Institutions

The institutions operated by such state agencies as the Department of Corrections, Department of Mental Health and Developmental Disabilities, and Department of Children and Family Services may submit a one and five-year plan for occupational education and receive financial support similar to that provided for LEAs. Such administrative arrangement has stimulated considerable growth in occupational education programs for institutionalized disadvantaged and handicapped persons. A DVTE staff member is assigned as regional director for State agency occupational education programs.

Evaluation

Evaluation of LEA and State institution programs is accomplished by an on-site visitation of a team of persons selected by DVTE. No one from DVTE or the LEA serves on the team. Program deficiencies or shortcomings reported by the evaluation team must be accounted for in the next one and five-year LEA plan indicating what steps are being taken to correct them.

Ancillary Activities

DVTE administrative policies and procedures make it possible to contract with universities and private agencies for professional and curriculum development activities and research projects that impact on the improvement of LEA programs. Although the responsibility for providing occupational education for disadvantaged and handicapped persons is that of the LEA, the State agency is looked to for leadership and assistance in improving the occupational education programs and the quality of instruction. The most obvious and urgent need affecting the system of "mainstreaming" is that of preparing occupational education teachers to cope with disadvantaged and handicapped persons enrolled in regular programs.

Summation

The Illinois DVTE administrative arrangement for implementing occupational education programs for disadvantaged and handicapped persons has not been without faults and real problems. However, it has potential for making a lasting impact on more and better programs and services in LEAs and other agencies. The system fosters educational "mainstreaming" of disadvantaged and handicapped persons and focuses on individualized instruction. Funding and supportive services are available to LEAs rural and urban, large and small, all depending upon local initiative and effective administrative arrangements.

Curricula Methodology and Materials for Vocational Education

by

Bryan V. Fluck

As curricula are discussed and studied, it becomes very apparent that the basic philosophy of a concept must be ascertained if that concept is to become an integrated and positive factor in the total educational environment. Educators must categorize individuals according to the many divisions that relate to their abilities to learn. This is important in the initial investigation of methodology and for the study of primary skill areas. However, the original skill areas should only be of importance during the implementation of concepts and not [illegible] of paramount importance after goals are established. This is especially true when educators are developing programs for the disadvantaged, handicapped, and the multi-handicapped. All too often the educator fears that the programs being developed must be so separated that he tends to ignore the major purpose for the existence of the programs.

If the intent of the programs is to prepare the individuals for entry level positions and for growth within his or her field, then the positions within industry must be observed and studied. In this manner an open ended curricula can be developed that will help the individual become a part of the industry he serves and, in turn, industry will have an employee that need not be positioned toward terminal growth.

It is with these thoughts in mind that the concept of T - I - M - E - S (Temporally Individualized Modular Education Scheduling) was developed. It is a combination of proven and new educational processes which could be the basis for the integration of curricula and scheduling. Utilizing this method it is possible to develop vocational and academic content for all levels of achievers regardless of the time it takes them to learn. Time becomes a factor after something is learned. In this manner the competency acquired is measured through the process of production. Each student will proceed at his or her own rate to his or her own level of ability in areas both of interest and competence. An all important factor is that a goal be established by each student and that this goal can be changed based on acquired knowledge. This will provide the basis for horizontal as well as vertical development.

The complete development of this process is interdependent with the workings of industry and the Department of Labor. Industry uses the Dictionary of Occupational Titles for its general job classifications. There is a definite vertical "ladder of achievement" process involved. To a degree there is also horizontal growth; but this growth does not involve the social necessities for the total development of the individual. This must be a part of a complete curricula so that as phases apply to each individual they can be modified and utilized for personal growth.

In effect a model of procedures is developed that will allow the upper level disadvantaged and/or handicapped student to find his or her place in a vocational curriculum. The lower level student can be segregated until the educational process either eliminates the obstacle of integration or postpones integration until the client finds his or her place within the labor market.

An analysis of this type necessarily proceeds from a fundamental premise or model, and this is all too frequently not explicated. The fundamental assumption underlying this method is that vocational and social reality occurs in systems that are interactive in nature. This requires the joint consideration of economic, psychological, and institutional variables. The preceding is the theoretical premise upon which the program was founded. In no way should the educational process be isolated from the real world.

Development of the Program

As stated previously, the Dictionary of Occupational Titles was used as a guide. By using this universal language of business, industry, and government career ladders were formulated, working backwards, from the highest skill in any given area to the lowest employable skill. The next step was to group occupational skills that were necessary for many areas of instruction. In so doing several thousand occupations were developed for the twenty instructional areas so analyzed.

These in turn were reviewed by teachers from other districts, technical (craft) advisory committees, and instructors within the school. After these several reviews it was possible to gather some behaviorial data for the occupations and utilize it within the tasks and modules. All of this methodology did not differentiate in any way from standard and accepted vocational procedures. This merely identified a system and all of the educational possibilities which could be offered.

This major task broke down the twenty core programs into segments by content, including both skills to be developed and knowledge to be learned. The following terms and definitions were used to identify each major category.

Occupation - As listed in the Dictionary of Occupational Titles; the specific career objective of the student.

Program - A course of study as described by the Pennsylvania Department of Education which prepares a person for an occupation.

Unit - One general content area within a program. It should be noted here that many units comprising an entire program are being utilized in place of the more traditional semester by semester course plan.

Module - One specific content area within a unit. The module title lists items to be covered. The module is the smallest scheduling unit in terms of student enrollment.

Task - A specific skill or knowledge component within a module. Each task has a complete and detailed description of the operation, skills, and equipment involved.

A simple, efficient system of recording and coding the program breakdown was developed. To develop this a two-digit coding system was used for each unit, module, and task. Using this system, the programs were outlined and then recorded. Recent developments have shown that a three-digit system is better.

Prerequisite modules and the approximate time for average student completion had to be specified. This information was obtained from the experienced vocational technical instructors and the program consultants representing business, industry, agriculture, and government. In the initial phase these program consultants and instructors were able to identify over one thousand modules and approximately seven thousand tasks. In turn, they were also able to develop behavioral objectives for each unit and module. Modules and tasks are continually being developed.

A continuing and most important aspect of the modular program development has been the analysis of all modules to determine the extent to which they could be identified in different programs and be combined into "general modules" for greater instructional efficiency.

Two delivery systems are developed--one, a hand carried system and the other, a computer based system.

The D.O.T. synthesis gives the ability, through the analysis of core programs, to integrate units, modules, and tasks; permitting students to combine programs into combinations according to both labor market and student needs. This becomes an ever changing process according to D.O.T. and industry classifications. It also means that the system allows students to change goals without wasting time by building upon previous experiences.

One of the most important factors was the development of a system that provided for educational development for students representing all achievement levels. Using this method only the very lowest ability student needs initial separation. In time, even those students should be able to attain individual recognition with an integrated class.

Student Classification

Disadvantaged: Those persons who are disadvantaged to the extent that they cannot succeed and/or compete successfully in regular vocational or consumer and homemaking education programs qualify for special vocational assistance. For example, disadvantaged students who qualify may be enrolled in regular vocational programs with students who are not disadvantaged and provided with such supplementary services as may be necessary for them to compete successfully in a regular program with minor adjustments.

Economically: 1) Family income below poverty level
2) Lacks proper food, clothing and shelter
3) Lacks money for normal school expenses

Culturally: 1) From broken or sub-normal homes
2) Lacks exposure to the "average" culture and experiences
3) Unable to use formal language for average school progress
4) From impoverished cultural background

Educationally: 1) Has serious reading, computational or language difficulties
2) Two or more grades below normal achievement for age and/or grade
3) Failing two or more subjects
4) Potential dropouts
5) Curriculum has not provided him with a salable skill or preparation for higher education

Socially: 1) Defies rules and regulations
2) Dominates scene
3) Disruptive behavior
4) Truant
5) Poor self-image
6) Hostile
7) Agressive and unconventional
8) Overly sensitive to constructive criticism.

Handicapped: The handicapped are those persons who are mentally retarded, hearing impaired and deaf, speech handicapped, visually impaired and blind, seriously emotionally disturbed, crippled, those with learning disabilities or health impaired persons who by reason of their handicapped condition cannot succeed in a vocational education program designed for persons without such handicaps; and who for that reason require special educational assistance or a modified vocational program.

The most important function for planning a program is the identification of the disadvantaged and handicapped. Sources of information are: (a) school records, (b) information from student, (c) information from parents, (d) community information, and (e) public and social agencies.

Admiral Peary AVTS established a vocational program for mentally handicapped students from two area State Hospitals in January 1973.

Approximately 50 of these people were transported to the AVTS each day for two hours after the regular program ended. They were involved in a Career Awareness program and explored ten unskilled and semi-skilled occupations by spending one week in each course. They were then free to choose their areas of concentration for the remainder of the program. This program was continued during the 1973-74 school year and will be in existence in 1974-75.

A majority of these students were and are multihandicapped. In addition to being mentally handicapped, many were emotionally disturbed and suffering from physical disabilities. Included among these were deaf, speech impaired, motor coordination handicaps, visually impaired, epileptics, paralytics, and spastic conditions. It was felt that the degree of success in the program would be low. The final results exceeded all estimates. It must be remembered that in most cases, these students were not considered trainable. The program at Admiral Peary proved otherwise.

Repetitious tasks that would bore an average person were done by these students with exactness and pride. Assembly line type of work could be accomplished by the greater portion of these handicapped people with excellence.

Of course, there were students involved in the program that will probably be institutionalized for the remainder of their lives and will never be productive citizens. Failures were expected. However, even these people responded positively to the program because of the social aspects of the situation. They encountered new personalities and faces other than those at the institution and they left school knowing that there was a world outside the State Hospital.

Among the problems encountered were over-agressive behavior and transition of students out of the institution before training was ended.

List of DOT's for Special Education Students

A-1	Agriculture Careers	
	Tree Pruner	404.884-014
	Agricultural Aid	421.384-010
	Sawmill Worker	667.782-114
A-2	Agriculture Careers	
	Nursery Worker	406.887-030
B-2	Automotive Careers	
	Tire Repairman	915.884-014
	Steamcleaner	915.887-022
C-1	Building Construction Careers	
	Painter	840.781-010
C-2	Building Construction Careers	
	Electrician Helper	829.887-014
D-2	Metal and Materials Careers	
	Shuttle Car Operator	932-883-026
E-1	Service Careers	
	Manicurist	331.878-010
	Reducing Salon Attendant	334.871-014
E-3	Service Careers	
	Inventory Clerk	233.388-014
	Sales Clerk	290.478-014
E-4	Service Careers	
	Hotel Clerk	242.368-010
	Reservation Clerk	249.368-082
	Laundryman Hand	361.884-014
	Dry Clearner	362.782-010
	Laundry Machine Mechanic	629.281-046
	Ticket Agent	919.368-014
E-5	Service Careers	
	Cook, Short Order	314.381-010
	Cook Helper I	317.887-010
	Butcher	525.381-010
F-1	Technical Careers	
	Electronics Assembler	726.281-010
	Printed Circuit Assembler	726.884-094
F-2	Technical Careers	
	Smoke Tester	012.281-014
	Instrument Man	018.188-014
	Audiologist	079.108-010

F-4 Technical Careers

Key Punch Operator	213.582-010
Sorting Machine Operator	213.885-010

ADMIRAL PEARY VOCATIONAL TECHNICAL
RESEARCH AND CURRICULUM CENTER
EBENSBURG, PENNSYLVANIA 15931

DOT TITLE: Agricultural Aid
OTHER TITLES:

DOT NO: 421.384-010
APVT NO:
OE NO:
MOS NO:

OCCUPATIONAL DESCRIPTION: Note: The program of study stated here is based on course material now available. Restrictions, such as unavailable course material or a minimum number of hours of work experience required, may limit the degree to which a student can be prepared for this type of work.

An agricultural aid cultivates crops and takes care of animals. He or she does this by following the instructions of research workers who are experimenting with plants or animals. Cleaning kennels, feeding and watering animals, and preparing soil and plants are some jobs done by agricultural aids. He or she may also collect seeds, weigh crops, and store crops. An agricultural aid might find jobs at colleges or in private industries such as large grain and feed businesses.

References:

Dictionary of Occupational Titles. 3rd ed., vol. 1, 1965, U.S. Government Printing Office, Washington, p. 7.

Occupational Outlook Handbook. 1972-1973 ed., U.S. Government Printing Office, Washington, p. 579.

OCCUPATIONAL LATTICE:

Title	DOT No.
Biological Aid	049.384-010
Farmer, General	421.181-010
Dairy Husbandman	040.081-026

OCCUPATIONAL LADDER:

Title	DOT No.
Farm Manager	409.168-010
Agricultural Aid	421.384-010
Farmer, Cash Grain	401.181-010
Salesman, Grain & Feed	262.358-014
Vegetable Grower	403.181-010

LOCAL EMPLOYERS:

Agway Inc.
Windber Store
Stockholm Ave.
Windber, Pa.

Penn State University
State College, Pa.

ADMIRAL PEARY VOCATIONAL TECHNICAL
RESEARCH AND CURRICULUM CENTER
EBENSBURG, PENNSYLVANIA 15931

DOT TITLE:	Laundryman Hand	DOT NO:	361.884-014
OTHER TITLES:		APVT NO:	
		OE NO:	
		MOS NO:	57E

OCCUPATIONAL DESCRIPTION: Note: The program of study stated here is based on course material now available. Restrictions, such as unavailable course material or a minimum number of hours of work experience required, may limit the degree to which a student can be prepared for this type of work.

The laundryman hand supervises loading of the machines. Water temperatures, suds levels, time cycles, addition of bleach is controlled by the laundryman. When all washing, ironing and repairing have been completed the laundry is regrouped and delivered to the customer. Most laundry plan workers receive their training on the job. The laundry industry is a growing one. It is the largest personal service industry.

Reference:

Occupational Outlook Handbook. 1972-1973 ed., U.S. Government Printing Office, Washington, p. 835.

OCCUPATIONAL LATTICE:

Title	DOT No.
Dry Cleaner	362.782-010
Laundry Machine Mech.	629.281-046

OCCUPATIONAL LADDER:

Title	DOT No.
Laundry Machine Mech.	629.281-046
Dry Cleaner	362.782-010
*Laundryman Hand	361.884-014

LOCAL EMPLOYERS:

Ebensburg Laundry & Linen
R.D. #2
Ebensburg, Pa.

Century One-Hour Cleaners
409 Main
Johnstown, Pa.

White Swan Dry Clearning
605 W. High
Ebensburg, Pa.

Industrial Uniform & Towel
2515 18th Street
Altoona, Pa.

Troy Laundry & Dry Clearning
360 Strayer
Johnstown, Pa.

Wright Laundry
721 N. Juniata
Hollidaysburg, Pa.

ADMIRAL PEARY VOCATIONAL TECHNICAL
RESEARCH AND CURRICULUM CENTER
EBENSBURG, PENNSYLVANIA 15931

DOT TITLE: Tire Repairman
OTHER TITLES:

DOT NO: 915.884-014
APVT NO:
OE NO:
MOS NO: 57C

OCCUPATIONAL DESCRIPTION: Note: The program of study stated here is based on course material now available. Restrictions, such as unavailable course material or a minimum number of hours of work experience required may limit the degree to which a student can be prepared for this type of work.

A tire repairman repairs and replaces defective tires on automobiles, buses, trucks, and other automotive vehicles. A tire repairman may work for a franchised automobile dealer in his maintenance department, in a general repair agency, a gasoline service station, or a specialty shop that has one or more tire repairmen on its payroll.

The job training is minimal, and with the increased use of the automobile from 83 to 156 million cars in the next 20 years jobs will be available. Chance for advancement is limited unless further training is achieved.

References:

Dictionary of Occupational Titles. 3rd ed., vol. 1, 1965
U.S. Government Printing Office, Washington, p. 741.

Occupational Outlook Handbook. 1972-1973 ed., U.S. Government Printing Office, Washington, p. 471.

OCCUPATIONAL LATTICE:

Title	DOT No.
Salesman, Auto Parts	280.358-018

OCCUPATIONAL LADDER:

Title	DOT No.
Muffler Installer	807.884-050
Lubrication Man	915.887-014
*Tire Repairman	915.884-014
Service Station Attendant	915.857-010
Steamcleaner	915.887-022

LOCAL EMPLOYERS:

Stover Arco
115 E. High St.
Ebensburg, Pa.

Barber's Sunoco Service
W. High St.
Ebensburg, Pa.

Boron Oil Co.
512 W. High St.
Ebensburg, Pa.

Nastasi's Mobile Service
Route 22, West
Ebensburg, Pa.

Sam's Gulf Station
926 2nd St.
Cresson, Pa.

Varner's Service Station
529 Main St.
Portage, Pa.

Summary
of
Vocational Education Seminar
on
Disadvantaged and Handicapped

November 13 & 15, 1974

DVER Project #V0135VZ

"Assessment of Need in Programs of Vocational Education for the Disadvantaged and Handicapped"

First Session

Wednesday, November 13, 1974

Topic: Legislative implications of estimates of need in Vocational Education for the disadvantaged and handicapped.

Chairperson: Dr. Joe R. Clary, Executive Director
North Carolina State Advisory Council on
Vocational Education

Presenters: Mr. Reginald Petty, Deputy Director
National Advisory Council on
Vocational Education

Mr. Leroy A. Cornelsen, Planning Officer
Bureau of Occupational and Adult Education

Dr. Melvin L. Barlow, Director
Division of Vocational Education, and
Professor, Graduate School of Education,
University of California, Los Angeles

Second Session

Friday, November 15, 1974

Topic #1: Insuring accountability of Vocational Education programs to disadvantaged and handicapped populations: (a) role of State Advisory Councils and (b) role of state education officials with responsibility for the disadvantaged and handicapped.

Topic #2: Alternative approaches for meeting the needs of disadvantaged and handicapped in Vocational Education.

Chairperson: Dr. Joe R. Clary, Executive Director,
North Carolina State Advisory Council on
Vocational Education

Presenters: Mr. Robert Kennon, Supervisor
Disadvantaged Vocational Educational and Career
Development Service,
Michigan State Department of Education

Mr. Clifford Jump, Member
Michigan State Advisory Council on
Vocational Education

Mr. Stewart Miller, Supervisor
Special Needs Program,
Division of Vocational Education, Arizona

Mr. Larry Noble, Rehabilitation Services
Coordinator
Colorado River Indian Tribes Rehabilitation
Center

Seminar Summary

The Second Issue Oriented Seminar was held in conjunction with the NACVE/SACVE Joint Day of Planning, November 13 and November 15, 1974. The seminar was chaired by Dr. Joe R. Clary, Executive Director of the North Carolina State Advisory Council. The seminar focused on three issues:

1. Legislative implications of estimates of need in vocational education for the disadvantaged and handicapped.
2. Insuring accountability of vocational education programs to disadvantaged and handicapped populations: the role of State Advisory Councils and the role of state education officials with these designated responsibilities.
3. Alternative approaches for meeting the needs of disadvantaged and handicapped in vocational education.

Wednesday, 13 November

After introductory remarks explaining the background and purpose of the seminar, Dr. Clary introduced the topic, speakers, and general format to be followed. Mr. Reginald Petty, Deputy Director of the National Advisory Council on Vocational Education was the first presenter to be called upon. Petty focused his remarks on two principal areas of interest.

First, he explained that the NACVE position on vocational education legislation for the disadvantaged was currently non-commital. That is, at the present time, the National Advisory Countil did not support any particular piece of legislation; the Council's contention is that the '68 bill is basically appropriate to the situation if slight modifications are added. The two most pressing modifications are: (a) the need to modify categorical distinctions, and (b) the need to provide greater consideration of urban need ... perhaps in a massive, one-year, one-shot appropriation for the cities.

Petty's second series of remarks dealt generally with the continuing mistrust of the delivery system for vocational education funds, especially those earmarked for the disadvantaged and handicapped. The fear is that the children's needs are not being met because dollars are lost to overhead, because too often vocational education either functions as or appears to be a tracking system for students, and because the mechanism of transacting business through the state to the local system is cumbersome. He went on to point out that organizations like the National Urban League are advocating a system of earmarked funds dispensed directly to the agencies in the field rather than allocation through the state.

The second presenter for Wednesday's evening session was Lee Cornelsen, Planning Officer for the Bureau of Occupational and Adult Education. He discussed the thinking of the Office of Education about potential legislation that may be written by HEW and proposed for introduction to Congress. The discussion that Cornelsen led focused on some potential adjustments to the '68 Amendments which would render them more broad and manageable. Among the potential alternative ideas that are being considered are the following:

1. Title I. Governance under a single state agency.
2. Title II. Maintain the National and State Advisory Councils while broadening their scope to include more adult education and to emphasize more activity in planning and needs assessment.
3. Title III. Group all programs and services from the '63 bill as amended ... (currently Part B funds).
4. Title IV. Combine all targeted funds (currently 38% of total appropriations) into one area called "Special Needs". Require that these funds be matched before they can be spent. Further, there would be no mandate for specific use, but rather, expenditures will be required for a "target area".
4. Title V. Consolidate research, curriculum, and professional development in a form that provides for 1/2 the funds to be distributed as state allocations and the other 1/2 as discretionary allocations.

Cornelsen discussed the possibility of U.S.O.E. undertaking an annual Assessment of Need for planning and for dissemination to the states.

Dr. Melvin Barlow, Director, Division of Vocational Education, U.C.L.A. the last formal presenter of this first session delivered a broad ranging statement focusing on the central problems he (and those in the AVA) had formulated with regard to the legislative implications of an assessment of need. He identified five major problems:

1. The lack of consistency in definition--while this is not of particular importance to the handicapped, with the exception of EMR borderline students, it is particularly acute for the disadvantaged; that is, the VEA definition differs from that of ESEA, while the work-study definition differs from that of the NYC. This lack of consistency creates a confusion that hampers effective administration of programs and planning/allocation of resources.
2. The multiple definitions also help to create and perpetuate categorical structures that too often function as segregated entities, rather than as a comprehensive program. The effects of these categorical structures often manifest themselves in complicated identification and prescriptive measures, non-mainstreaming programs, and local constraints inhibiting more effective expenditure of funds.
3. The lack of federal and state leadership, particularly in the area of vocational education for the handicapped. He suggested that while the states set the requirements, few were able to show how the requirements could be met; further, there are few viable leadership training programs.
4. Good model programs are hard to find; furthermore, if found, the information is not well disseminated.
5. Too often, our present legislation and practice treats disadvantaged or handicapped students as the product rather than treating the comprehensive vocational education programs as the product with students as the clients.

As possible solutions to these difficulties, Barlow suggested a number of ideas including the necessity of each LEA conducting a needs assessment, utilization of state staff as resources to local planners rather than enforcers of arbitrary guidelines, designing of comprehensive district-wide programs to meet needs, and the planned flexibility of mandated percentage funds such that they can be impacted on areas of greatest need.

A round table discussion involving the presenters and the 23 delegates to the Joint Day of Planning who attended our Wednesday session followed the formal presentations. Among the many points that were made, these several are of particular importance.

1. The need remains to continue categorical funding in order to insure meeting needs ... flexible categories are also required.
2. There is a greater need to emphasize pre- and in-service training for teachers of disadvantaged and handicapped.
3. A need exists to channel money directly to local areas to meet their specific needs and require strict accountability ... (needs like bilingual training).
4. Local needs assessment is a critical need.
5. There is a need to increase the set-aside funds and expand their scope, e.g., vocational education in elementary schools.
6. A great need for coordinated planning exists.

The Friday session of the seminar was again chaired by Dr. Joe Clary and focused on two issues: (1) Insuring Accountability of Vocational Education Programs to Disadvantaged and Handicapped Populations: (a) Role of State Advisory Councils, and (b) Role of State Education officials with responsibility for the disadvantaged and handicapped; (2) Alternative approaches for meeting the needs of disadvantaged and handicapped in vocational education.

Dr. Clary's presentation sketched the role of the North Carolina State Advisory Council from purpose to operation; additionally, he defined the role of state boards, as he viewed them, and suggested how the interrelationship of the two entities should be conceived. Among the more important points he made was the similar duties of both State Boards of Education and State Advisory Councils in that each was established for planning, implementation, and accountability assessment at both state and local levels. Clary focused on the less than sparkling record of both of these organizations with regard to the disadvantaged and handicapped. He argued that a less than effective effort had been made to assess, plan, and meet the needs of these children; furthermore, too often teachers, counselors, and administrators have not been prepared to be sensitive to these needs, or to put into practice ideas that could reach more students.

On a state and national level, he said that funds have too often been allocated without adequate consideration of local need, expertise or commitment ... and too often without adequate state leadership.

In his view, the role of SACVE is to exercise some of this needed leadership, particularly in areas such as evaluation of effectiveness and making recommendations for improvements for vocational education. The time has come for SACVE to insist on accountability and insure that vocational education programs for the disadvantaged and handicapped are more than a bookkeeping exercise. Clary suggested that the most reasonable way of doing this was by asking a series of questions including the following:

1. What is the State's philosophical commitment to serving the disadvantaged and handicapped?
2. To what extent has an appropriate assessment of needs been made?
3. How were goals and objectives arrived at? Were they realistic?
4. What administrative procedures have been worked out to insure proper emphasis?
5. To what extent is the State agency insuring accountability of what happens at the local level? Is accountability built into the planning mechanism?
6. What professional development efforts have been made to assist administrators, counselors, teachers, and others to work with the disadvantaged and handicapped?
7. What is happening in local schools and institutions to assure that disadvantages and handicaps are either eliminated or alleviated to the extent that success in regular programs is possible?
8. What coordination exists to insure effectiveness among institutions and organizations?

Clary views the role of state education officials to be one that is interdependent with the SACVE role. Using North Carolina as an example, he suggests that in too many states there is no specialized leadership for vocational education for the disadvantaged and handicapped. Without specific responsibility and leadership, who will insure accountability or efficiency? While the set-asides provide some demand for accountability, they provide little assurance that the needs will be met.

Clary did not suggest an adversary role for state officials and State Advisory Councils. Rather, it is two sides of the same coin and should serve to emphasize the importance of the task at hand. Needs assessment, planning and leadership are the means for effective coordination.

The second presenter of the session, Robert Kennon, Supervisor for Disadvantaged Vocational Education and Career Development Service, State of Michigan, also emphasized the need for coordination and cooperation between state officials and the State Advisory Council. Using Michigan as an example of a good relationship between the two, Kennon noted that the State Board had developed an accountability model used on all levels of vocational education. The model which focuses on commitment, purpose, strategies, and outcomes, provides a tool for evaluation of the Michigan commitment to the policy of "A right to a skill for everyone in Michigan". Furthermore, Kennon suggested that four ingredients were necessary for the success of vocational education programs: (a) money, (b) well designed programs, (c) talented people, (d) institutional commitment. Among these four, commitment may be the most critical. It is this commitment that provides the opportunity/necessity for accountability.

Clifford Jump, a member of the Michigan State Advisory Council provided support for Kennon's position in his presentation. Jump maintained that the State Advisory Council functioned as a watchdog to insure that the vocational education delivery system runs efficiently and provides needed services. This effort occurs through reading and approving the state plans, conducting ongoing evaluation efforts, encouraging/facilitating cooperation between organizational entities like vocational education and special education, and establishing smaller, task-oriented advisory committees for specific areas of vocational education. Additionally, the State Advisory Council serves an education function by generating/disseminating information and by providing support for State officials. In Jump's view, these functions serve to clearly define the role of the State Board in Michigan ... a role that might serve as a model elsewhere.

The last session, "Alternative Approaches to Meeting the Needs of Disadvantaged and Handicapped," featured three presenters from Arizona: Mr. Stewart Miller, Supervisor of Special Needs Programs; Mr. Larry Noble, Coordinator of Rehabilitation Services for the Colorado Indian Tribes; and Mr. Jack Riddle, Director of the Maricopa County Skills Center. Each suggested a different model for meeting the needs of the handicapped and disadvantaged.

Noble began the session by defining his particular problem as one of a lack of adequate vocational models. That is, in his area, the Indians have little notion of the viable alternatives available to them within the world of work. This is complicated by a continuing lack of experience with persons performing these various tasks. However, the most critical problem is the lack of self-awareness among the Indians; the question of realistically appraising one's own capabilities is of greatest importance and greatly complicates the other two problems. To meet these needs, Noble has programs of career orientation and support counseling underway. The idea is to combat experiential deprivation and to increase both academic achievement and the intrinsic value of schooling.

Jack Riddle described the Pioneer School, one of three projects that he coordinates. This project is a cooperative venture between two school districts to reconstruct a pioneer town for the National Bicentennial. It is a project that requires linkages among seven agencies in order to function effectively. Included are the Division of Vocational Education, Department of Economic Security, the Pioneer Foundation, the Community College District, the Courts, the Probation Officer, and the Sheriff's Department. The program is an extended classroom in two parts, one for high school dropouts and potential dropouts and one for prisoners. Each school district contributed two academic and two vocational teachers in addition to the students. The idea is to teach a saleable vocational skill in addition to providing help in basic remediation while in a different and more practical environment. So far, according to Riddle, the program has been a spectacular success.

Stewart Miller described the "agency linkage" model on a broader level, the Skill Center. In Arizona two such centers operate--one directed by Riddle in Maricopa County and one in Tucson, under the direction of Ed Acuna. Miller described the Tucson Center as an open entry-open exit program which takes referred students at any point in their development and provides an opportunity for them to advance in any vocational area as far and as fast as they desire. The idea is to provide mastery learning to any number of students rather than to focus on the number of students who might attend classes for any particular semester.

The model, as Miller described it, combines linkages of the State Department of Education, the Division of Community Colleges, CETA, Model Cities, and the WIN program. It operates under a unified budget with specific, contractually agreed-to responsibilities for each of the agencies. This provides a second form of accountability which accompanies the continuous monitoring of student service and success. Furthermore, these agencies "buy" slots for referred students, thus providing training up to the "job ready" point. Arizona has found this to be a particularly effective means of linking limited funds from various sources into a highly effective unified system. The Arizona model could guide the development of comprehensive rural or less adequately funded vocational education programs for the disadvantaged and handicapped.

APPENDIX B

SAMPLE CORRESPONDENCE FROM THE NOMINATION PROCEDURE

System Sciences, Inc.

P.O. Box 2345
Chapel Hill, North Carolina 27514

Chapel Hill 919: 929-7116
Durham 919: 286-0711

Request for Nominations from State Officials

This letter is to request your assistance in helping us to identify and to obtain available descriptive literature on the most effective vocational education programs for the disadvantaged in your State.

Specifically, we are interested in vocational education programs at the secondary level presently in operation and which have been in operation for at least two years; programs emphasizing training of disadvantaged students for gainful employment and/or continuing education; programs which emphasize serving disadvantaged students in regular vocational education through adjustments and supportive services, including cooperative work experience; and, programs in both rural and urban settings.

System Sciences, Inc. is currently conducting a research project, "Assessment of Need in Programs of Vocational Education for the Disadvantaged and Handicapped." Emphasis is placed on the disadvantaged, from the vocational education perspective and as especially defined in the statute. The project is sponsored by the Division of Research and Demonstration, Bureau of Occupational and Adult Education, U. S. Office of Education.

The purposes of the research effort are to provide information which will assist the States in using disadvantaged funds more effectively; and more fundamentally, to provide a basis for improving estimates of the total requirements for the achievement of the purposes of P.L. 90-576 on behalf of the vocational education disadvantaged and handicapped. The 15% and 10% "set-asides" were crude "guesstimates" of stark minimum needs; no serious attempt is known to have been made subsequently to either determine/refine this quantification of needs for these special populations, or to express needs in terms of budgetary requirements.

One objective of the research now underway, therefore, is to make initial developments of a methodology that would enable vocational educators to evaluate the magnitude of the vocational education disadvantaged need. The end-product of this project will assist the vocational education profession in the complex and difficult undertaking of estimating total resource and funding needs and in improving the applied effectiveness of all available resources. In order to achieve the objectives of this research project, the most effective vocational education disadvantaged programs will need to be identified and documented, the resource requirements of these programs quantified, and the resource utilization patterns described.

In nominating the most effective programs for the disadvantaged in your State, may we suggest that consideration be given to the following criteria: program's ability to attract disadvantaged students; retention capability, i.e., reduction of dropout rate; students' achievement in the program; program completions; placements; and, follow-up evaluations. There may be additional criteria which come to mind in selecting your most effective programs, and we would like you to indicate these as you feel appropriate.

We are requesting that you nominate the three most effective programs for the disadvantaged at the secondary level in your State. Please use the enclosed forms in describing the programs you wish to nominate. A self-addressed, stamped envelope is also enclosed for returning the completed forms to us. Approximately 60 programs will be selected from among those nominated to be included in the study. Therefore, it is possible that we may be back in touch with you to get more information about a particular program or project.

Thank you very much for your cooperation and consideration in responding to this request.

Sincerely,

Jim Hughes
Senior Research Analyst

JHH:dml
Enclosure

Nominated Program

TITLE: ____________________

ADDRESS: ____________________

____

____

CONTACT PERSON: ____________________ PHONE NO.: __________

Describe population served (number, types of disadvantagement): __________

____

____

____

Describe program (course offerings, skill training areas, supportive services, special personnel, program costs, etc.): ____________________

____

____

____

____

____

____

Criteria (check off the criteria you considered in nominating this program):

Ability to Attract ______________	Program Completions ______________
Retention ______________	Placements ______________
Student Achievement ______________	Follow-up ______________

Other (please list): ____________________

____

Additional descriptive literature enclosed: Yes __________ No __________

Please return to: System Sciences, Inc., P.O. Box 2345, Chapel Hill, N.C. 27514

System Sciences, Inc.

P.O. Box 2345
Chapel Hill, North Carolina 27514

Chapel Hill 919: 929-7116
Durham 919: 286-0711

Request for Nominations from Regional Officials

This letter is to request your cooperation and assistance, and to advise you of upcoming activity in your region related to the survey phase of our current research project.

System Sciences, Inc. is currently conducting a research project, "Assessment of Need in Programs of Vocational Education for the Disadvantaged and Handicapped." Emphasis is placed on the disadvantaged, from the vocational education perspective and as specially defined in the statute. The project is sponsored by the Division of Research and Demonstration, Bureau of Occupational and Adult Education, U.S. Office of Education.

The purposes of the research effort are to provide information which will assist the States in using disadvantaged funds more effectively; and more fundamentally, to provide a basis for improving estimates of the total requirements for the achievement of the purposes of P.L. 90-576 on behalf of the vocational education disadvantaged and handicapped. The 15% and 10% "set-asides" were crude "guess-timates" of stark minimum needs; no serious attempt is known to have been made subsequently to either determine/refine this quantification of needs for these special populations, or to express needs in terms of budgetary requirements.

One objective of the research now underway, therefore, is to make initial developments of a methodology that would enable vocational educators to evaluate the magnitude of the vocational education disadvantaged need. The end-product of this project will assist the vocational education profession in the complex and difficult undertaking of estimating total resource and funding needs and in improving the applied effectiveness of all available resources. In order to achieve the objectives of this research project, the most effective vocational education disadvantaged programs will need to be identified and documented, the resource requirements of these programs quantified, and the resource utilization patterns described.

Specifically, we are interested in vocational education programs at the secondary level presently in operation which (1) have been in operation for at least one full year; (2) emphasize training of disadvantaged students for gainful employment and/or continuing education; (3) emphasize serving disadvantaged students in regular vocational education through adjustments and supportive services, including cooperative work experience.

System Sciences, Inc. has received nominations of effective programs serving the disadvantaged from several sources, including programs in States within

Offices: Suite 206B, Chapel Hill Professional Village, 121 S. Estes Dr., Chapel Hill, N.C.

Corporate Headquarters: Bethesda, Maryland

Region . Enclosed is a list of programs which have been nominated as effective programs for the disadvantaged within your region. For each program, the following information is provided: (1) source of nomination; (2) criteria checked; (3) type of program; (4) type of environment; and (5) additional comments. Also enclosed is a description of the coding system used along with definitions. We would appreciate your looking over this list of programs and letting us know of any additions, deletions, or corrections you would suggest. Particularly, if there are programs of which you are aware which are not included on our list, but you feel should be considered, we would like to know of these programs.

We are now moving into the survey phase of our research project. The survey will include a mailed questionnaire to each program director and/or administrator. This mailed questionnaire will be preceded by an introductory letter indicating the source of nomination, and requesting the program's cooperation in completing the questionnaire. Following the mailing of the questionnaire, each program director will be contacted by phone to go over the questionnaire with him and provide any needed clarification or explanation. When completed, the program director will mail the questionnaire back to us. This is one part of the survey methodology--program director's questionnaire.

The second part of the survey will be completed via a number (18-20) of site visits to selected programs. The purpose of the site visits, in addition to obtaining more information and having an on-site look at the program, will be to obtain information directly from program personnel, i.e., teachers, counselors, coordinators, etc. This information will be collected via group administration of a teacher questionnaire, which will be administered on-site by our project staff.

Both of these questionnaires, program director and teacher, are currently being field tested with selected programs in North Carolina. Final revisions will be completed within the next three weeks. Implementation of the survey will begin no later than March 1, 1975.

We appreciate this opportunity to share with you our plan for conducting this survey of effective programs for the disadvantaged, and will appreciate information regarding programs to be included in the survey, as well as any other suggestions you might have.

We look forward to hearing from you and to the opportunity of working with vocational education personnel in your region.

Sincerely yours,

Jim Hughes
Senior Research Analyst

JHH:dml
Enclosures

APPENDIX C

MASTER PROGRAM LIST

CODING SYSTEM

Source of Nomination

1 = State Advisory Committee on Vocational Education, SACVE
2 = State Vocational Education Official with responsibility for the Disadvantaged
3 = Programs and Services Branch, DVTE files
4 = Other

Criteria Checked

1 = Ability to attract students
2 = Retention
3 = Student achievement
4 = Program completions
5 = Placements
6 = Follow-up
7 = Other

Type of Environment

1 = SMSA, within Central City
2 = SMSA, outside Central City
3 = Urban, non-SMSA (>10,000)
4 = Rural (≤10,000)

Type of Program

1 = Regular, supportive services
2 = Modified regular program, supportive services
3 = Special program
4 = Cooperative work experience/work study

Information Received

x = yes
blank = no

Questionnaire Received

x = yes
blank = no

CODING SYSTEM EXPLANATIONS

Source of Nomination

1. State Advisory Councils on Vocational Education. A program has been nominated by the Executive Director of the respective State Advisory Council on Vocational Education. These nominations were received in September and early October 1974, following a letter request which was mailed in late August.

2. State Vocational Education Official with Responsibility for the Disadvantaged. A program has been nominated by the State Official in the respective State's Division of Vocational and Technical Education who has responsibility for the vocational programs for disadvantaged students at the State level. These nominations resulted from a letter request mailed October 23, 1974.

3. Programs and Services Branch, DTVE, BOAE. A program has been selected from a file of exemplary programs located in the Office of Ms. Barbara Kemp, Program Specialist for the Disadvantaged, State Programs and Services Branch, Division of Vocational and Technical Education, Bureau of Occupational and Adult Education, Office of Education.

4. Other Sources. A program has come to the attention of the project staff from a source other than the three described above. This would include, for example, information exchanges at professional meetings and conferences, ERIC and other literature review, and nominations from HEW regional directors.

Criteria Checked

Applicable for programs nominated by State Officials with responsibility for the Disadvantaged. The letter request asked, for each program nominated, for the nominator to check-off from a list of six suggested criteria the criteria which the program met. In addition, if the nominator felt that additional criteria was applicable, he was asked to identify these. Definitions for each criterion are the following:

1. Ability to attract - program has demonstrated ability to recruit (attract) disadvantaged students.
2. Retention - program is able to maintain disadvantaged students once they have enrolled.
3. Student achievement - students achieve academically at a satisfactory level, develop appropriate work related adaptive social skills, develop positive self concept, increase awareness of various career areas, develop job specific vocational knowledge and work skills.
4. Program completions - number of students completing the program satisfactorily.
5. Placements - students completing program who (a) are placed on a job; or (b) continue their education and training.
6. Follow-up - to be done at various time intervals to determine: (a) job or school satisfaction; (b) further success in education or training programs; and (c) monetary gain or loss.

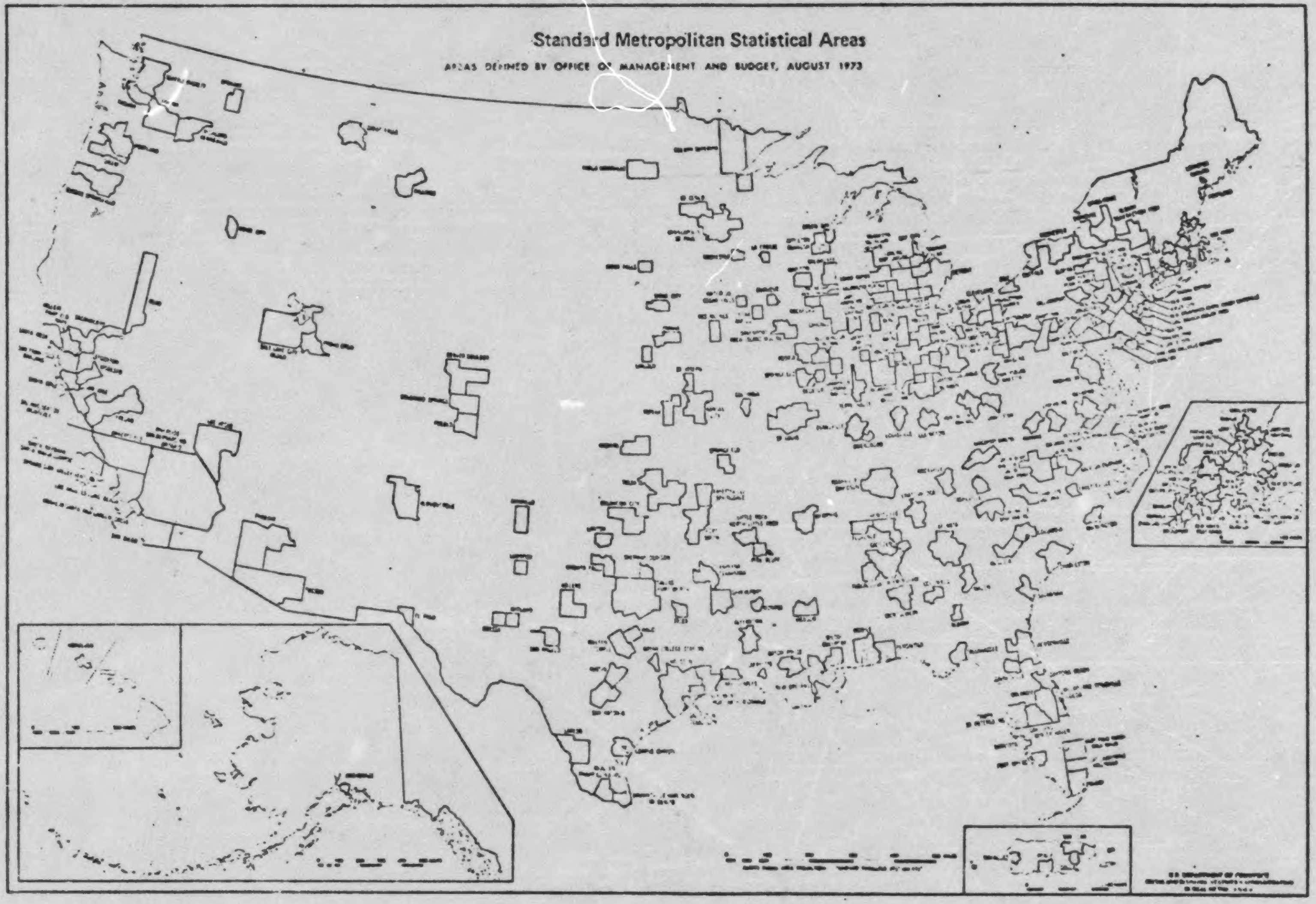
Type of Environment

In categorizing program nominations by type of environment, use is made of the areas defined in August 1973 by the Office of Management and Budget as Standard Metropolitan Statistical Areas (SMSA). Generally speaking an SMSA consists of a county or groups of counties containing at least one city (or twin cities) having a population of 50,000 or more plus adjacent counties which are metropolitan in character and are economically and socially integrated with the central city. (Refer to the map on the following page.)

Criteria for SMSA's:

1. Population size--each SMSA must include at least:
   a) One city with 50,000 inhabitants or more, or,

   b) Two cities having contiguous boundaries and constituting, for general purposes, a single community with a combined population of at least 50,000, the smaller of which must have a population of at least 15,000. If two or more adjacent counties each have a city of 50,000 inhabitants or more and the cities are within 20 miles of each other (city limits to city limits), they will be included in the same area unless there is definite evidence that the two cities are not economically and socially integrated.
2. Metropolitan character of outlying counties--specifically, the following criteria must be met:



Standard Metropolitan Statistical Areas

AREAS DEFINED BY OFFICE OF MANAGEMENT AND BUDGET, AUGUST 1973

a) At least 75% of the labor force of the county must be in the nonagricultural labor force.

b) The county must meet at least one of the following conditions:

(1) It must have 50 percent or more of its population living in the contiguous minor civil divisions having a density of at least 150 persons per square mile, in an unbroken chain of minor civil divisions with such density radiating from a central city in the area.

(2) The number of nonagricultural workers employed in the county must equal to at least 10 percent of the number of nonagricultural workers employed in the county containing the largest city in the area, or the outlying county must be the place of employment of at least 10,000 nonagricultural workers.

(3) The nonagricultural labor force living in the county must equal at least 10 percent of the nonagricultural labor force living in the county containing the largest city in the area, or the outlying county must be the place of residence of a nonagricultural labor force of at least 10,000.

3. Integration of central county and outlying counties--sufficient economic and social communication:

a) At least 15% of the workers living in the given outlying county must work in the county or counties containing the central city or cities of the area, or

b) At least 25 percent of those working in the given outlying county must live in the county or counties containing the central city or cities of the area.

4. In New England, where city and town are administratively more important than the county and data are compiled locally for those minor civil divisions, cities and towns are the units used in defining SMSA's. Here, a population density criterion of at least 100 persons per square mile is used as the measure of metropolitan character and the integration criteria for the towns and cities are similar to criterion 3.

Central city of an SMSA--The largest city in an SMSA is always a central city. One or two additional cities may be secondary central cities in the SMSA on the basis and in the order of the following criteria:

1. The additional city or cities must have a population of one-third of that of the largest city and a minimum population of 25,000 except that both cities are central cities in those instances where cities qualify under 1, b) of the criteria for SMSA's.

2. The additional city or cities must have at least 250,000 inhabitants.

Ring of an SMSA--The ring is all of the SMSA that is not part of the central city itself. This concept is used in the population census to provide information on commuting patterns of workers.[1/]

Programs located in cities, towns, or communities outside SMSAs were coded urban if population >10,000, and rural if population ≤10,000. This decision was arbitrary. The U.S. Census Bureau classifies areas as rural if population ≤2,500, which was felt, for the purposes of this survey, to be too low. The distinction between non-SMSA urban and rural is important in terms of differential costs of vocational education programs. It should be noted that a city may have a population count ≤10,000 and not be classified as rural if it is located within an SMSA.

Type of Program

1. Regular with Support Services

A regular vocational education program supplemented by supportive and/or special educational services which are provided in order that disadvantaged students can succeed in the regular vocational education program.

Regular programs of vocational education are those programs which have been acknowledged by the State Board of Education and the Division of Vocational and Technical Education to have general application statewide for average students. In most cases, these programs have completed course "guides or standards" which have been made available to all administrative units in the State.

Supportive services are special educational services which are supplementary to regular programs. These services are provided in order that disadvantaged students might achieve occupational education objectives that would otherwise be beyond their reach. Those additional services needed by the disadvantaged may include such elements as those that follow:

a) Special counseling services (including testing, job exploration, personal guidance, etc.)
b) Diagnostic services (eligibility, degree of handicapped or degree of being disadvantaged, evaluation of capabilities, etc.)

[1/] _1970 Census Users' Guide_, Part I, Issued October 1973, U.S. Department of Commerce, Bureau of the Census, p. 83-85.

c) Tutorial services (individual or small group basis--directly related to occupational training)

d) Psychological services (the teacher may assist with making arrangements, etc.)

e) Work with individuals after school or on weekends.

2. Modified Regular Program with Support Services

A modified or adjusted program is a regular vocational education program that has been changed, adjusted, altered to more adequately meet the special needs of disadvantaged students whose social, cultural, economic, academic disadvantagements and/or handicaps have prevented them from experiencing success in a regular program area of occupational education. Particular emphasis in modification is given to revision of the curriculum.

Examples of program modifications might include:

a) Self-instructional, individualized instructional or especially formulated packages (i.e., audio-visual)

b) Reduced class size to allow for more individualized teaching

c) Use of conference periods for work with "only disadvantaged students"

d) After school work with students

e) Weekend work with students

f) Specific demonstrations just for the disadvantaged students in each class.

3. Special Program

A vocational education program that has major differences other than simply support services or curricular modifications when compared to a regular program in the same area of occupational education is to be considered a special program. It is a program that is specifically planned to meet the special needs of the disadvantaged learners whose social, cultural, economic and/or educational handicaps have prevented them from succeeding in a regular occupational program.

Special programs are those provided only when a disadvantaged student cannot benefit from regular occupational education programs to any extent, even with modifications thereto or with the provision of supplementary special educational services. It is often segregated from regular programs or housed in separate facilities and the classes often contain only vocational education disadvantaged or handicapped students.

4. Cooperative Work Experience and Work Study

For purposes of classifying programs in this survey, a cooperative work experience or a work study program may represent a program in and of itself, or it may be the major component of another program type. It is coded only when on-the-job skill training is provided on a long-term basis to students enrolled in the program. It may or may not provide monetary compensation to enrolled students.

Information Received

Directors of nominated programs were asked to submit pertinent information about their programs. Materials received ranged from one-page résumés to extensive summaries of many aspects of respective programs. Of the 158 programs nominated, 89 returned some type of supplemental information. Receipt of such information is noted on the master program list.

Questionnaires Received

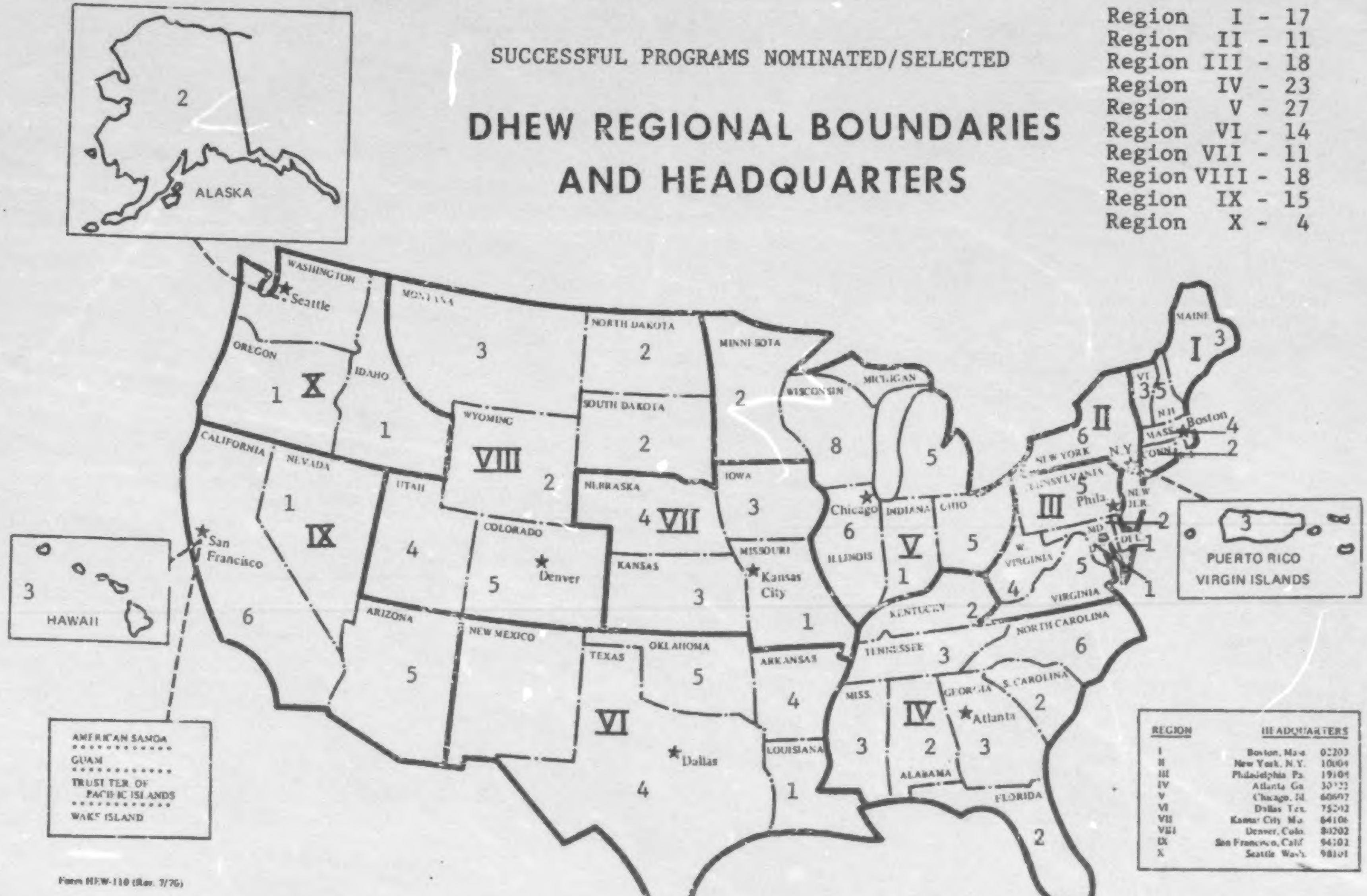
If program administrators responded to System Sciences, Inc. request to participate in the survey by completing and returning the program administrator questionnaire, receipt is indicated on the master list. Ninety-eight (62%) of the sample responded by completing and returning the questionnaires.

The following list of program nominations is the master list of nominations developed by System Sciences, Inc. during the course of the survey. Figure 1 indicates the breakdown of nominated programs by state.

SUCCESSFUL PROGRAMS NOMINATED/SELECTED

DHEW REGIONAL BOUNDARIES AND HEADQUARTERS

Region I	17
Region II	11
Region III	18
Region IV	23
Region V	27
Region VI	14
Region VII	11
Region VIII	18
Region IX	15
Region X	4


ALASKA 2
HAWAII 3
WASHINGTON
Seattle
OREGON 1
X
IDAHO 1
MONTANA 3
WYOMING
VIII 2
UTAH 4
COLORADO 5
Denver
NORTH DAKOTA 2
SOUTH DAKOTA 2
NEBRASKA 4
VII
KANSAS 3
IOWA 3
MISSOURI 1
Kansas City
MINNESOTA 2
WISCONSIN 8
MICHIGAN 5
ILLINOIS 6
Chicago
INDIANA 1
V
OHIO 5
CALIFORNIA 6
San Francisco
NEVADA 1
IX
ARIZONA 5
NEW MEXICO
TEXAS 4
VI
Dallas
OKLAHOMA 5
ARKANSAS 4
LOUISIANA 1
KENTUCKY 2
TENNESSEE 3
MISS. 3
IV
ALABAMA 2
GEORGIA 3
Atlanta
S. CAROLINA 2
NORTH CAROLINA 6
FLORIDA 2
W. VIRGINIA 4
VIRGINIA 5
PENNSYLVANIA 5
III
Phila.
MD 1
DEL. 1
NEW JER. 2
NEW YORK 6
II
N.Y.
MAINE 3
I
VT 3
N.H. 5
MASS. 4
Boston
CONN. 2
PUERTO RICO VIRGIN ISLANDS 3
AMERICAN SAMOA
GUAM
TRUST TER. OF PACIFIC ISLANDS
WAKE ISLAND
Form HEW-110 (Rev. 7/76)

REGION	HEADQUARTERS	
I	Boston, Mass.	02203
II	New York, N.Y.	10004
III	Philadelphia Pa.	19101
IV	Atlanta Ga.	30323
V	Chicago, Ill.	60607
VI	Dallas Tex.	75202
VII	Kansas City Mo.	64106
VIII	Denver, Colo.	80202
IX	San Francisco, Calif.	94102
X	Seattle Wash.	98101

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Maine	I	Project SAVE Edith Slipp, Coordinator Fort Fairfield High School Maine School Administrative District #20 Fort Fairfield, Maine 04742	2	1,2,3,5,6	1	4	X	
Maine	I	Operation Learn Nannabelle A. Carter Presque Isle High School Coordinator-Teacher 16 Fort Street Presque Isle, Maine 04769	2	1,2,4,5,6	4	3	X	X
Maine	I	"Relevant Education" Orrison Moody, Ass't Principal Van Buren District High School 321 Main Street Van Buren, Maine 04785	3,4		1	4	X	X
Mass.	I	Vocational Special Needs Joseph A. Prioli Director of Occupational Education Brockton Public School 470 Forest Avenue Brockton, Mass. 02401	2	1,2,3,4,5 6	2	1	X	X
Mass.	I	Satellite Learning Program Jack Westcott, Curriculum Coordinator Keefe Technical School Framingham, Mass. 01701	2	1,2,3,4,5 6	4	2	X	X
Mass.	I	Mobile Occupational Development Education Laboratories Everett R. Warzecha, Director 173 Chelmsford Street Chelmsford, Mass. 01824	3		2	2	X	X
Mass.	I	Homemaker Training Program Paula Vosburgh, Project Director The Women's Service Club 464 Mass. Ave. Boston, Mass. 02118	3		3	1	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
N.H.	I	Program for Special Needs Robert S. Holt Vocational Director Lebanon High School Lebanon, N.H. 03766	2,3	3,4	1	4	X	X
N.H.	I	"Learning for Individuals, Families & Employment" (LIFE) Mrs. Audrey Starkey or Ms. Carolyn Wheeler Keene High School Arch Street Keene, N.H. 03431	2	1,3,4	4	3		X
N.H.	I	"Learn to Earn" Milton Johnson Vocational Coordinator Spaulding High School Rochester, N.H. 03867	2	2,4	3	3	X	X
N.H.	I	Vocational Tourist Industry Oriented Program Mrs. Barbara Rennie Linwood High School Lincoln, N.H. 03103	3		1	4	X	
N.H.	I	Vocational Agriculture Program Millard Martin, Jr., Chairman White Mountains Regional High School Whitefield, N.H. 03598	3		1	4		
R.I.	I	Operation VITAL (Operation Prevent Dropouts) Gerard A. Cartier Federal Aid Coordinator Woonsocket Jr. High School 70 North Main Street Woonsocket, R.I. 02895	2	1,2,3,4,7	1	2	X	X

State	Region		Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
R.I.	I	Narragansett Regional Work Study Program Ronald Poplar, Guidance Counselor Narragansett School System Mumford Road Narragansett, R.I. 02882	2	2,3,5		2	X	
Vt.	I	Area Youth Development Prg. John E. Murray Director, Secondary Ed. Anthony Union High School 604 Main Street Bennington, Vt. 05201	2		1	4	X	X
Vt.	I	Service Occupations Luther Tabor, Director Burlington Voc. Tech. Ctr. 52 Institute Road Burlington, Vt. 05401	2		2	3	X	X
Vt.	I	Elevate Program James R. Frasier Elevate Instructor Hartford Area Voc. Center White River Junction, Vt. 05001	2		1	4	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
N.J.	II	Employment Orientation for Pregnant Girls Mr. George Meyer, Director Career Education Family Learning Center New Brunswick, N.J. 08902	2	1,2,4	4	1		
N.J.	II	Career/Occupational Education George Gamvas Director, Occupational Ed. Lakewood Public Schools 100 Linden Street Lakewood, N.J. 08701	2	3,5,6	4	3	X	X
N.Y.	II	Integrated Business Program Mr. Hans Lang, Director Occupational & Continuing Education Syracuse City School District 409 W. Genessee Street Syracuse, N.Y. 023601	2	2,3,4,7	1	1	X	
N.Y.	II	Career Center Mr. Bertram F. Wallace Director, Occupational Ed. Yonkers Public Schools 317 South Broadway Yonkers, N.Y. 10705	3		1	1	X	X
N.Y.	II	Exploratory Occupational Education Donald J. Bambero, Supervisor Putnam/No. Westchester BOCES #1 Yorktown Heights, N.Y. 10598	2	1,2,4,7	1	2	X	X
N.Y.	II	Satellite Academy Marc Bassin, Director New York City Board of Education 132 Nassau Street New York, N.Y. 10038	2	1,2,4,7	2	1	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
N.Y.	II	Pre-Technical Textile Mr. Murray A. Cohn Chief Administrator Brandeis High School 145 W. 84th Street New York, N.Y. 10024	3		1	1		
N.Y.	II	Communication Training in Business & DE Dr. Geraldine D. Chapey Assistant Director New York City Board of Education 110 Livingston St., Rm. 403 Brooklyn, N.Y. 11201	3		2	1	X	X
P.R.	II	A Plan for the Training and/or Retraining for Disadvantaged Out-of-School Youth and Adults in Puerto Rico Rafael C. Arbelo Atiles Director, Business Ed. Prog. Dept. of Education Box 759 Hato Rey, P.R. 00919	1		1	3	X	X
P.R.	II	A Plan for an Academic and Vocational Enrichment Program for Students with Academic, Socio-economic, and/or Cultural Handicaps Mr. Dionisio Rosaly, Principal Francisco Mendoza High S. Porchado Street Isabela, P.R. 00662	1		1	3	X	X

State	Region	Program Name Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
P.R.	II	Pilot Program in Business Education for Training Disadvantaged Students at the Education Opportunities Center at Buchanan for Successful Competition in the World of Work as Court Recorders Rafael C. Arbelo Atiles Director, Business Ed. Prg. Dept. of Education Box 759 Hato Rey, P.R. 00919	1		4	3	X	X

State	Region	Program Name and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Del.	III	Project 70.001 Ken Smith, National Director Cooperative Distributive Education Box 897 Dover, Delaware 19901	1,3	5	4	4	X	
D.C.	III	Remedial Reading & Remedial Mathematics in the Vocational High Schools Division of Career Development Program of D.C. Mr. John W. Posey Public Schools of D.C. 415 12th Street, N.W. Washington, D.C. 20004	1,2		1	1	X	
Md.	III	Office Occupations Program Doris G. Wheeler, Coordinator Baltimore City Public Schools Oliver & Eden Streets Baltimore, Md. 21213	3		1	1		
Md.	III	Governor Thomas Jefferson High School Mr. Steve Hess, Teacher Frederick, Md. 21703	1		1	2		
Pa.	III	Project Select Employment Trainee Fred A. Monaco, Prj. Director Pittsburgh Public Schools 635 Ridge Avenue Pittsburgh, Pa. 15212	1,2	1,2,3,4,5,6,7	4	1	X	X
Pa.	III	Admiral Peary Area Vocational Technical School Dr. Bryan V. Fluck, Director P.O. Box 96 Ebensburg, Pa. 15931	4		1	2	X	

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Pa.	III	Clerical Laboratory Paul S. Steffy Coord. of Fed. Programs McCaskey High School 225 W. Orange Street Lancaster, Pa. 17604	1		1	1	X	X
Pa.	III	"Operation Salvage" Theodore M. Sheckart, Contact Person York County Vocational-Technical School 2179 Queen Street York, Pa. 17402	2,3	1,2,3,4,5	1	1	X	X
Pa.	III	Vocational Lab Assistant and Interpreter Mr. Charles Matters Reading-Muhlenberg Area Tech School P.O. Box 3068 Reading, Pa. 19064	1,2 3	1,2,3,4,5 6	1	1		
Va.	III	Work Experience Career Exploration J. J. Dunbar WECEP Coordinator Charlottesville High School Charlottesville, Va. 22901	1		4	3	X	X
Va.	III	Princess Anne High School-Office Services Mrs. Mary M. Barber, Superv. Business & Office Education Virginia Beach City Public Schools Box 6038 - Annex II Virginia Beach, Va. 23456	1		1	2	X	X
Va.	III	Clarke Vocational Training Center Mr. Ray Spruill, Director Vocational Education Portsmouth City Schools Box 998 Portsmouth, Va. 23705	1		1	1		

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Va.	III	Special Program for the Disadvantaged Students Mrs. Helen M. Thrift Hopewell Occupational Wk. Ctr. P.O. Box 270 Hopewell, Va. 23860	2	1,2,3	3	2		
Va.	III	Office Services Mrs. Joanne Norman Coordinator Petersburg High School 512 W. Washington Street Petersburg, Va. 23803	2	1,2,3	2	1		
W. Va.	III	Service Station Management Charles G. Moore Director, Voc. Tech. & Adult Education Cabell County Public Schools 2800 5th Avenue Huntington, W. Va. 25702	2		2	3		X
W. Va.	III	Diversified Cooperative Program for Disadv. Students Ray M. Kesler, Director Monongalia Co. Public Schools 1301 University Avenue Morganton, W. Va. 21505	2		4	3		X
W. Va.	III	Business & Office Education Mr. George A. Lipscomb, Vocational Director Preston Co. Educational Center Kinston Road Kingwood, W. Va. 26537	3		1	4		
W. Va.	III	Miner Training Program Mr. Charles Harris, Director of Vocational Education Logan County Board of Edu. Stratton Street Logan, W. Va. 25601	2		2	4	X	

State	Region	Program Name Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Ala.	IV	Vocational Education Mr. Peter Newton, Director Butler County Board of Edu. P.O. Box 160 Greenville, Ala. 36037	1		1	4	X	
Ala.	IV	Vocational Education Mr. Jim Wyrosdick, Director Vocational Education Montgomery County Board of Education P. O. Box 1991 Montgomery, Ala. 36103	1		1	1		
Fla.	IV	Beggs Voc. & Career Ed. Ctr. Don Treadwell, Director Escambia County Schools 600 W. Strong Pensacola, Fla. 32501	1,4		3	1	X	X
Fla.	IV	Individualized Manpower Training Systems Cynthia C. Clear, Coordinator Blanche Ely Comm. Career Complex 801 N.W. 10 Street Pompano Beach, Fla. 33311	2	1,3	4	2	X	X
Ga.	IV	CVAE, VOT, and DE Miss Susie Copeland Business Education, Dept. Chairman Roosevelt High School 745 Rosalia St., S.E. Atlanta, Ga. 30310	3		2	1		X
Ga.	IV	Coordinated Vocational Acad. Ed. (CVAE) Henry L. Gibbs CVAE Coordinator Rockdale Co. High School Conyers, Ga. 30207	4,1		2	4	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Ga.	IV	CVAE Marcella Ford Wilkins, Director Samuel H. Archer High School 2250 Perry Blvd., N.W. Atlanta, Ga. 30318	4		2	1	X	X
Ky.	IV	O.W.E. (Occupational Work Experience) Lawrence A. Burdon, Supervisor J. Graham-Brown Education Ctr. 675 River City Mall Louisville, Ky. 40202	2	2	4	1		X
Ky.	IV	Voc. Ed. I, Voc. Ed. II Diversified Work Experience O.T. Atkins Teacher-Coordinator Belfry High School Belfry, Ky. 41514	2	3	4	4	X	X
Miss.	IV	Agriculture Power and Machinery George Vance, Instructor West Tallahatchie High School Webb, Miss. 38966	2	1,2,3	1	4		X
Miss.	IV	Building Trades Mr. John B. Moore, Director Starkville Vocational Complex Yellowjacket Drive Starkville, Miss. 39759	2	1,2,3,4,5	2	4		
Miss.	IV	Clothing Services Ms. Emily Watts, Director Newton Separate Schools Newton, Miss. 39345	2	1,2,3	2	4		
N.C.	IV	Cooperative Occupational Ed. W.D. Bryant, Director 712 W. Eugene Street Greensboro City Schools Greensboro, N.C. 27402	2		4	1		X
N.C.	IV	Alamance Co. Vocational Education Program Donald C. Iseley, Local Dtr. Box 110 Graham, N.C. 27253	2		4	2		X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
N.C.	IV	General Industry Robert L. Hines, Local Dtr. Rocky Mount City Schools 800 Fairview Rd. Rocky Mount, N.C. 27801	2		1	3		X
N.C.	IV	Program for the Occupationally Disadvantaged Francis Huntley, Local Dtr. Buncombe County Schools Box 7557 Asheville, N.C. 28807	2		1	2		X
N.C.	IV	Learning Enrichment Activities Mrs. Agnes S. Freeman, Coordtr. Kinston City Schools 307 W. Atlantic Avenue Kinston, N.C. 28501	2		1	3		X
		Disadv. Man-Month Program Roger Holloman, Director Occupational Education Wayne County Schools 301 N. Herman St., Box GG Goldsboro, N.C. 27530	2		1	3	X	X
S.C.	IV	Food Services Mr. Jimmy C. Bales Director, Career Education Richland County School District 3560 Lynhaven Drive Columbia, S.C. 29204	2		4	1		X
S.C.	IV	Lancaster Co. Voc. Program Mr. T. A. Jackron, Director Lancaster Co. Vocational Ctr. Lancaster, S.C. 29720	1,3		1	4		
Tenn.	IV	V.I.P. Remedial Education Ms. Betsy Heinmann Clarksville High School Richview Road Clarksville, Tenn. 37040	2	1,2,3,4,6	1	3		

State	Region	Program Name Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Tenn.	IV	Alternative Schools William C. Wilhelm Supv., Special Voc. Programs Memphis City Schools 2597 Avery Street Memphis, Tenn. 38112	2	1,2,3,4,5 6	3	1	X	X
Tenn.	IV	Vocational Learning Center Mr. Raymond Nunley Holloway High School Murfreesboro, Tenn. 37130	2	1,2,3,4,5	2	2		

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Ill.	V	Occupational Training Program Mrs. Dale Bauman, Director District #205 Thornton Township 151st and Broadway Harvey, Illinois 60426	2	2,3,5,6	2	1		
Ill.	V	Instructional Resource Program (CWA) Warren A. Collier Instructional Coordinator Township High School District 214 799 W. Kensington Road Mt. Prospect, Illinois 60056	1,2	1,2,3,5,7	1	2	X	X
Ill.	V	Thornridge High School Mrs. Dale Bauman 1500 Cottage Grove Dolton, Illinois 60419	1		1	2		
Ill.	V	Disadv. and Handicapped Robert S. Gomsrud, Director Whiteside Area Vocational Ctr. 1608 5th Avenue Sterling, Illinois 61081	3		1	3		X
Ill.	V	Vocational-Education Program Mr. James E. Little Director, Voc-Ed Dept. of Career Education 1024 North Second Street East St. Louis, Ill. 62201	4		1	1	X	
Ill.	V	Special Vocational Ed. E. Dean Browning Admin. Ass't for Voc. Ed. Alton Community Unit #11 1211 Henry Alton, Illinois 62002	1,2	2,5	1	2	X	X
Ind.	V	Michigan City Area Vocational School Mr. Jack Apple, Director 817 Lafayette Street Michigan City, Ind. 46360	1		1	3		

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Mich.	V	Special Needs Werner C. Peterson Coord.-Counselor Delta-Schoolcraft I.S.D. P.O. Box 70 Gladstone, Mich. 49837	1,2	1,2,3,4	1	4	X	X
Mich.	V	Special Needs J. Patrick Egan, Director of Special Needs Calhoun Area Vocational Ctr. 475 E. Roosevelt Avenue Battle Creek, Mich. 49017	1		1	1	X	X
Mich.	V	Edwardsburg Special Needs Projects Ned B. Sutherland CEPD #48 Coordinator Lewis Cass ISD, R. #1 Cassopolis, Mich. 49031	1		1	4	X	X
Mich.	V	Senior Intensified Program Fred S. Cook/Gwendolyn L. Hester, Project Director/ Ass't. Project Director Wayne State University College of Education Detroit, Mich. 48202	2	2,3,4,5	3	1	X	X
Mich.	V	Preparatory Occupational Training for Special Needs Students in Southwest Oakland County Irving Boynton Project Coordinator Southwest Oakland Voc.Ed. Ctr. 1000 Beck Road Walled Lake, Mich. 48088	2	1,2,3,4	1	2	X	X
Minn.	V	Vocational Education for Adult Advancement Dr. Wm. R. Lundell Program Director Special School District #1 807 N.E. Broadway Minneapolis, Minn. 55413	2	1,2,3,4,5 6	3	1	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Minn.	V	Career Education Center Mr. Dallas Flynn or Mr. Clifford Clausen, Contact Persons Lakes Vocational Center 200 East State Street Detroit Lakes, Minn. 56501	4	1,2,3,4,5 6	2	4	X	
Ohio	V	Voc. Exploration & Business Office Education & Voc. Home Economics for Unwed and/or Teenage Parents Fred Ricketts, Director Practical Education Columbus City Schools 270 E. State Street Columbus, Ohio 43215	2	2,3,7	3	1	X	X
Ohio	V	Project VEET Spencer L. Cooper, Coord. Wright-Patterson AFB Dayton City Schools Fairborn, Ohio 45433	3		4	1	X	X
Ohio	V	Vocational Program for Drop-out Prone Youth-Trade and Industry Mr. William I. Sims, Ass't. Manager, Adult & Special Voc-Ed Cleveland Board of Education 1380 E. 6th Street Cleveland, Ohio 44114	1,2	1,2,3,4,5 6,7	3	1	X	
Ohio	V	Learning Laboratories for Disadvantaged Youth J. H. Owen, Assoc. Coord. Voc. Ed. Cincinnati Public Schools 230 E. 9th Street Cincinnati, Ohio 45202	3		1	1	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Ohio	V	Pioneer Joint Vocational Sch. Dr. Robert Schumann Superintendent P.O. Box 309 Shelby, Ohio 44875	1		1	4	X	
Wisc.	V	Academic Vocational Adj. Program Donald Anderson Vocational Education Coord. Badger High School Lake Geneva, Wisc. 53147	2	2,3,4,5	2	4	X	X
Wisc.	V	Vocational Opportunities Mr. Donald Conachin CESA 7 Edgar High School Edgar, Wisc. 54426	2		2	4		
Wisc.	V	Metal Trades for the Disadvantaged Mr. Ed. Cottere East High School 2222 East Washington Ave. Madison, Wisc. 53704	2		2	1		
Wisc.	V	Pre-Voc. Thrust (Careers) James Clark, Director LaFollette High School 704 Pflaum Road Madison, Wisc. 53716	2		1	1	X	X
Wisc.	V	Vocational Orientation in Career Education (VOICE) Edward R. Ristow, Director Marshfield Senior High School 1401 Becker Road Marshfield, Wisc. 54449	2		2	3		X
Wisc.	V	PRIDE: Personalized Relevant Individualized Developmental Education Mr. Everett Marg, Contact Person North High School 1100 West Smith Avenue Oshkosh, Wisc. 54901	2		2	1		

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Wisc.	V	Project Retrieve Mr. Joe Papenfuss Sec. Read./Lang.Arts Coord. Unified School District #1 2230 Northwestern Avenue Racine, Wisconsin 53404	2		1	1		X
Wisc.	V	Vocational English Mr. Jim Biser, Voc. Coordinator Stevens Point Area H.S. 1201 North Point Drive Stevens Point, Wisc. 54481	2		1	3	X	

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Ark.	VI	A Concern for Special Needs Students Mrs. Judy Brady, Director Mills High School 1300 Dixon Road Little Rock, Ark. 72206	2	1,2,3,4,5 6	3	1	X	
Ark.	VI	Career Advancement Program Mrs. Virginia Faubel, Director Mrs. Linda Kosar, Coordinator Parkview High School 2500 Barrow Road Little Rock, Ark. 72204	2	1,2,3,4,5	2	1	X	X
Ark.	VI	Fargo Area Voc. School Michael D. Thomas, Director Brinkley Public Schools P.O. Box 807 Brinkley, Ark. 72021	2	1,2,3,4,5	2	4		X
Ark.	VI	General Cooperative Education Mr. Billy Nelson, Director Desha High School Desha, Ark. 12527	4	1,2	4	4		
La.	VI	Vocational Agriculture Dept. Mr. Sidney Jordon, Director Booker T. Washington H.S. 1201 South Roman St. New Orleans, La. 70125	1,3		1	1		
Okla.	VI	Carpentry & Construction Trades Glen M. Gardner, Deputy Superintendent Kiamichi Area Voc. Tech. School (Poteau Campus) Box 490 Wilburton, Okla. 74578	1,2 3	4,5	3	4		X
Okla.	VI	Rotating Health Occupations for Disadvantaged Glen M. Gardner, Deputy Superintendent Kiamichi Area Voc. Tech. School (Poteau Campus) Box 490 Wilburton, Okla. 74578	1	4,5	3	4		X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Okla.	VI	Western Okla. Area Voc. Technical School Jim Morlan, Prog. Director P.O. Box 149 Burns Flat, Okla. 73624	1	4,5	3	4	X	X
Okla.	VI	Vocational Occupations R. Leo Carden, Ass't Supt. Canadian Valley Voc.-Tech. Area School District #6 Box 579 El Reno, Okla. 73036	2	4,5,6	2	2		X
Okla.	VI	Health Occupations Careers for Disadvantaged Students Sizemore Bowlan, Director Voc. & Tech. Education Oklahoma City Public Schools 900 N. Klein Okla. City, Okla. 73106	2	4,5,6	2	1		X
Texas	VI	Food Services & Bldg. Maintenance J. A. Oppelt, Director Occupational Ed. & Tech. North East Independent School District 10333 Broadway San Antonio, Texas 78206	1		3	1	X	X
Texas	VI	CVAE David R. Enderby Vocational Director San Angelo I.S.D. 100 Cottonwood San Angelo, Texas 76901	2	2,3,4,5	2	1		X
Texas	VI	Learning Skills Center Thomas S. McGee Director, Learning Skills Center Houston I.S.D. 3200 Center Street Houston, Texas 77007	2	2,3,4,5	3	1	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Texas	VI	Coord. Voc. Academic Ed. J.W. Youngblood, Voc. Dtr. Palestine I.S.D. Loop 256 East Palestine, Texas 75801	2	2,3,4	2	3	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Iowa	VII	School Without Walls Career Education Program Mr. Harold Berryhill, Director Special Needs/Career Ed. Newton Community High School East 4th Street Newton, Iowa 50208	2	1	1	3	X	
Iowa	VII	Home Construction Marsh Houston, Director Amos Hiatt Jr. High School East 15th Street Des Moines, Iowa 50316	2	2	3	1		
Iowa	VII	Work Experience Arnold Paulsen Coord. of Guidance & Counseling Cedar Rapids Community Schools 346 2nd Avenue, S.W. Cedar Rapids, Iowa 52404	2	4,5	4	1	X	X
Kansas	VII	Exploratory Placement Ctr. Mr. Larry Schrader, Coordinator of Cooperative Ed. Wichita West High School 820 S. Osage Wichita, Kansas 67213	2	2,5,6	4	1	X	
Kansas	VII	Lawrence High School Extension Program Donald A. Binns Director, LHSEP Lawrence High School Lawrence, Kansas 66044	3,2		3	2		X
Kansas	VII	World of Work Jerry McCloud Ass't Director & Coordinator Area Vocational Tech. School 2500 Steele Road Kansas City, Kansas 66104	2	3,5,6	2	1	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Mo.	VII	Youth Opportunities Unlimited Roy Hedrick, Director Moberly Public Schools 1139 Urbandale Drive Moberly, Mo. 65270	1		3	1	X	X
Neb.	VII	Hands-On-Training (HOT) Ed Schwartzkopf, Project Dtr. Lincoln Public Schools 720 South 22nd Street Lincoln, Nebraska 68510	2	1,2,3,4,5 6	3	1	X	X
Neb.	VII	Special Voc. Needs Voc. Prg. Beverly A. Harter, Director Vocational Education Plattsmouth Community Schools District #I 10th and Main Plattsmouth, Neb. 68048	1,2	1,2,3,4,5	3	4	X	X
Neb.	VII	Vocational Program for Macy Youth Mrs. Loretta Mickle Macy Public Schools Macy, Nebraska 68039	1,2	1,2,3,4,5	1	4		
Neb.	VII	Exploratory Pre-Voc. Studies Al Kulhanek, Principal Youth Development Center West Kearney School Kearney, Neb. 68847	3,4		4	3	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Colorado	VIII	Coop G Program Mr. Curt Debey, Coord. Granby High School Granby, Colorado 80446	1	4,5	4	4		
Colorado	VIII	Work Study Program Mr. Sam T. Lincoln, Teacher-Coordinator Alamosa High School Alamosa, Colorado 81101	3,4		4	4		
Colorado	VIII	Supplemental Services Linda Sorrento, Coordinator Adams Co., District #12 10280 N. Huron Denver, Colorado 80221	2	1,3,4	1	1		X
Colorado	VIII	Co-op G Bob G. Webb, Prog. Dir. Sheridan District #2 Box 1198 Englewood, Colorado 80110	2	1,3,4	4	1		X
Colorado	VIII	Co-op G Program Orville Beard, Coordinator Harrison High School Colorado Springs, Colo. 80907	1,2	1,2,3,5	4	1		
Montana	VIII	Cooperative Vocational Ed. Prog. Mr. Jerald Rosenberger, Dir. Browning High School Browning, Montana 59417	2	1,2,3,4,5	3	4	X	X
Montana	VIII	"The Next Step"-A Comprehensive Program in Occupational Preparation and Placement William A. Korizek School District #1 Helena Public Schools Helena, Montana 59601	4		1	3	X	
Montana	VIII	Secondary Multi-Occupational Programmed Instruction Mr. William A. Serrette Assistant Superintendent School District #2 101 10th Street, West Billings, Montana 59101	2	1,2,3	3	1		

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
N.D.	VIII	Special Needs Instructional Center Mr. George Pavlish, Supplementary Vocational Education Instructor Beach #3 Beach, N.D. 58621	3,2		1	4	X	X
N.D.	VIII	Diversified Occupations Program Mr. Jack Adams, Associate Superintendent and Project Director Turtle Mountain Community Sch. Belcourt, N.D. 58316	2	1,2,3,4,5 6	1	4	X	
S.D.	VIII	The Learning Center Southeast Area Vocational-Technical School Mrs. Eunice Hovlandore Mr. Ed Wood, Director 1401 East 35th Sioux Falls, S.D. 57105	1,2	3,5	2	1		
S.D.	VIII	Northwest SAVE Project Mr. Jim Doolittle Box 72 Lemmon, S.D. 57638	1		2	4		
Utah	VIII	Skill Center North Mr. Brent Wallis, Director 1100 Washington Blvd. Ogden, Utah 84404	1			2		
Utah	VIII	Branch Youth Services Janice Romney Director of Pupil Services Granite School District 340 E. 3545 South Salt Lake City, Utah 84115	4		4	1	X	X
Utah	VIII	Cache Instructional Workshop Lynn B. Nelson, Director Box 55A (Benson) Logan, Utah 84335	2		3	2	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Utah	VIII	Columbus Community Center Mr. Carl Shawhan, Director 2530 South 5th St., East Salt Lake City, Utah 84106	2			1		
Wyoming	VIII	Youth Development Program Jim Deaver, Prog. Dir. Albany Co. School District 1948 Grand Avenue Laramie, Wyoming 82070	1,2		4	3		X
Wyoming	VIII	Facilities Instructional Materials and Resources to Provide Indian Students Equal Opportunities in Agricultural Education Mr. Arland Carlson Program Director Lander Valley High School 1000 Main Street Lander, Wyoming 82520	2	1,2	1	4	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Arizona	IX	Maricopa County Skill Center Jack Riddle, Director 246 South First Street Phoenix, Arizona 85004	1,2		3	1	X	
Arizona	IX	Tucson Model Cities Exemplary Vocational Prg. L.J. Bazzetta, Director Tucson Public Schools P.O. Box 4040 Tucson, Arizona 85717	4		3	1	X	
Arizona	IX	Pioneer Inmate/Dropout Prg. Mr. Jack Riddle, Director 246 South First Street Phoenix, Arizona 85004	1,2		4	2		
Arizona	IX	Tucson Skill Center Ed Acuna, Director Pima Co. Community College District 55 North 6th Avenue Tucson, Arizona 85701	1,2		3	1	X	X
Arizona	IX	Office Education Mrs. La Velta Patterson, Dir. St. John's High School St. John's, Arizona 85936	2	1,3,4	2	4		
Cal.	IX	Aids to Career Education (ACE) Bernardo Sandoval Consultant, Prgs. for Disad. Los Angeles Unified School Dist. 450 N. Grand Ave. H-256 Los Angeles, Cal. 90051	2	2,3,4	1	1	X	X
Cal.	IX	Voc.-Ed.-Tutorial Robert M. Wilkes Coordinator-Voc.Ed. Willits High School 249 N. Main Willits, Cal. 95490	2	1,2,3	1	4		X
Cal.	IX	Dr. Troy E. Nuckols Director, Career & Voc. Ed. System San Mateo Union High School San Mateo, Cal. 94401	1		[illegible]	2	X	X

State	Region	Program Name, Contact Person and Location	Source of Nomination	Criteria Checked	Program Type	Environment Type	Information Received	Questionnaire Received
Cal.	IX	V.E.A. Communications Skills Center Dr. Robert DeBord, Dir., Career Ed. Franklin Sr. High School Stockton City Unified 701 North Madison Street Stockton, Cal. 95202	2	1,2,3,4,5 6,7	1	1	X	
Cal.	IX	VEA Part B. Disadvantaged Loy Trowell Supervisor, Voc. Ed. San Jose Unified School Dist. 1605 Park Avenue San Jose, Cal. 95126	1		4	1	X	X
Cal.	IX	Robert A. Rajander Coordinator Career Education Berkeley Unified School Dist. 1336 7th Street Berkeley, Cal. 94710	1		4	1	X	X
Hawaii	IX	Pre-Industrial Preparation Ichiro Shikada Vice-Principal Konawaena High School Kealakekua, Hawaii 96750	2	1,2,3,4,5 6	2	4		X
Hawaii	IX	Pre-Industrial Preparation Program Mr. Gordon Kuwada, Director Waialua High School Waialua, Hawaii 96791	2	1,2,3,5,6	1	2		
Hawaii	IX	Pre-Industrial Preparation Program Ralph U. Murakami, Principal c/o Lahainaluna High School Lahaina, Hawaii 96761	2	1,2,3,4,5 6	1	4		X
Nevada	IX	SNVTC-Reading & Math Tutorial Program Clayton E. Farnsworth Director, SNVTC Clark Co. School District 5710 Mt. Vista Drive Las Vegas, Nevada 89120	3		1	1	X	X

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Alaska	X	Specialized Academic Voc. Ed. Jerry H. Strauss, Director S.A.V.E. Program Greater Anchorage Area Borough 5300 "A" Street Anchorage, Alaska 99502	2	1,2,4,5,6	3	3	X	X
Alaska	X	Course Application Mr. Dean A. Sawyer Bristol Bay Borough School District Box 169 Naknek, Alaska	2	2,3,4	1	4	X	
Idaho	X	D-4 Vocational Agriculture Program Mr. Vaughan Hugie, Principal Blackfoot High School 870 South Fisher Blackfoot, Idaho 83221	2	1,2,3,4,6	1	4		X
Oregon	X	Vocational Village Ronald L. Thurston, Dir. Portland School Dist. #1 5040 S.E. Milwaukee Avenue Portland, Oregon 97202	2	1,2,3,4,5 6,7	3	1	X	X

APPENDIX D

PROGRAM ADMINISTRATOR QUESTIONNAIRE

System Sciences, Inc.

P.O. Box 2346
Chapel Hill, North Carolina 27514

Chapel Hill 919: 929-7116
Durham 919: 286-0711

MEMORANDUM

TO:

FROM: System Sciences, Inc.

DATE: April 29, 1975

RE: National Survey of Voc-Ed Programs for the Disadvantaged

Enclosed you will find the Program Administrator Questionnaire for your program, submitted in relation to our national survey of the most effective programs serving voc-ed disadvantaged students, as described in our letter to you earlier this month. Also enclosed is a set of general instructions for completing the questionnaire.

We are most appreciative of your willingness to cooperate and participate in this national survey.

After you have had an opportunity to leaf through the questionnaire and review the general instructions, please make note of any sections which are not clear. We will be in touch with you by phone in a few days to answer any questions you have, provide additional information and explanations, and assist you in completing the questionnaire.

The questionnaire, along with any other program information or supplementary materials, should be completed and returned to us no later than Friday, May 23, so that we can meet our reporting deadlines.

In recognition of the special effort and time which may be required, a small honorarium will be forwarded upon our receipt of a completed questionnaire.

If you have any questions at this time, please feel free to call us collect (either Jim Hughes or Eric Rice) at 919:929-7116.

JHH:dml
Enclosures

Offices: Suite 206B, Chapel Hill Professional Village, 121 S. Estes Dr., Chapel Hill, N.C.

Corporate Headquarters: Bethesda, Maryland

General Instructions for Completing
the
Program Administrator Questionnaire

The Program Administrator Questionnaire is to be completed by the director/administrator of the vocational education program serving disadvantaged students. Some of the information and data requested may be provided by assisting staff, but the administrator should supervise this assistance when used and verify the correctness and completeness of the information provided.

The questionnaire is designed to obtain information in ten program areas, as follows:

(A) Identifying Information;

(B) Definition and Classification of School Year 1974-75 Voc-Ed Disadvantaged Students;

(C) Enrollment, Placement, and Follow-Up Data;

(D) Program Personnel;

(E) Special Features;

(F) Unmet Needs;

(G) Professional Training and Experience;

(H) Sex, Race, and Ethnicity of Current Voc-Ed Disadvantaged Student Population;

(J) Component Cost Information; and

(K) Element Cost Information and Estimates of Needed Resources.

Most of the questions you will encounter are self-explanatory. Specific footnotes and instructions have been provided for items and/or sections where additional clarification was felt to be appropriate. Please pay close attention to these detailed comments in completing the questions.

Descriptions of each section are given below. In addition to providing a brief overview of the section, some items within the section are explicitly defined.

(A) Identifying Information

In this section, please provide the requested information related to identifying name, school district(s) served, and name, address and phone number of contact person.

(B) Definition and Classification of School Year 1974-75 Voc-Ed Disadvantaged Students

You are asked to do two things in this section. First, provide the definitions your program uses in classifying and categorizing disadvantaged students, and indicate the number of students falling into each of these categories. Second, categorize your voc-ed disadvantaged student population by the primary effect of disadvantagement, and indicate the number of students for each of the primary effect categories as suggested by the Office of Education's guidelines document. This should be a non-duplicated count by primary type of disadvantagement.

(C) Enrollment, Placement, and Follow-Up Data

Enrollment, placement, and follow-up data are requested for the last school year period as well as your projections for the current school year. Please provide this information for the total voc-ed student population and voc-ed disadvantaged student population. The phrase, "eligible to complete", means those students who are candidates for graduation from the voc-ed program at the end of, or during, the school year. For example, if your program is a three-year sequential program, then include only those in the third, and last, year as being eligible to complete.

There are five specific footnotes in this section. Please pay close attention to these in providing the information requested.

(D) Program Personnel

The information requested in this section pertains to all personnel involved in any way with the voc-ed disadvantaged student population. Please list all staff positions by title, indicate the number of persons presently occupying each position, terms of employment, and provide a brief description of the responsibilities for each position.

(E) Special Features

Special program features include the following areas: recruitment procedures, student program assessment and evaluation reports, community support activities, placement linkages in the community, and liaison with labor unions in your area. Please indicate and describe those features which are applicable to your program. You may want to use additional pages to answer these questions. Please feel free to do so, but please refer to the number of the question when using additional pages.

(F) Unmet Needs

In this section, you are asked to provide estimates for two groups of disadvantaged students not now being served in your voc-ed program, but who are potentially eligible. These include students presently in school and those who are not in school. Please provide estimates of the number of students within your school district and cost per student in providing services to these two groups. Additionally, please describe briefly how (data and process) you arrived at these estimates.

(G) Professional Training and Experience

In this section, information is requested regarding your previous administrative and teaching experience, degrees, certificates and diplomas you have obtained, and other preparation designed to prepare you for your present administrative position. Also, you are asked to identify specific types of technical assistance which would assist you as an administrator of a voc-ed program serving disadvantaged students.

(H) Sex, Race, and Ethnicity of Current Voc-Ed Disadvantaged Student Population

In this section, please provide sex, racial, and ethnic breakdown of your present voc-ed disadvantaged student population. If an actual count is not available, then please provide an estimated percentage breakdown.

(J) Component Cost Information

In this section, cost information is requested in several ways: total (federal, state, and local) and per student cost for regular voc-ed students, total (federal, state, and local) and per student cost for voc-ed disadvantaged students, and costs for each of eight program components. The eight program components have been designed to include all types of resources and services which your program might utilize. These resources and services (elements) are grouped into the following eight components: (I) Support Services; (II) Instructional Materials, Supplies, Equipment, and Related Services; (III) Instructional Personnel; (IV) Instructional Related Needs; (V) Staff Development; (VI) Community Public Relations; (VII) Administration and Supervision; and (VIII) Facilities. Component groupings have been developed on the basis of functional areas. Before providing cost estimates for each component area, it is suggested that you review the listing of elements by component areas in Section K. This will provide you with more specific information as to the types of resources and services included in each component.

In addition to the cost information requested, please rank-order, in terms of importance, each of the program components for your present program, and also for the "ideal" program, assuming that all of these resources and services were available to you.

(K) Element Cost Information and Estimates of Needed Resources

Specific instructions for completing this section of the questionnaire are provided on page 3 of the questionnaire. Please review these instructions carefully before providing the information requested in the table shells.

As a suggestion, you may find it easy to estimate various levels of additional resources using different units of measurement. For example, it may be easiest to estimate "guidance and counseling services" in terms of number of positions. Likewise, it may be easiest to use dollar amounts to estimate "remedial materials." Feel free to use any of the four units of measure listed below, but please indicate which you are using.

P = number of positions
(for example, 8-1/2 P would mean 8-1/2 additional positions for a particular category)

MM = man-months
(for example, 24 MM would mean two man-years of effort in a given area)

$ = dollar cost
(for example, $500 of additional resources for materials or supplies, etc.)

SH = staff hours
(for example, 200 additional staff hours, or 200 SH of teacher planning time, could be estimated as being needed)

After reviewing the instructions and the questionnaire, please make note of those areas in which you need additional explanation and clarification. A project staff member from System Sciences, Inc. will be in touch with you by phone in a few days to answer any questions you may have.

NOTE: Your data are expected to be extremely useful in program and budget planning. If your experience with the voc-ed disadvantaged program provides you with a basis for evaluating its "benefits," by comparison or contrast with other career preparation/job training programs concerned with this "target" population, please feel free to add whatever comment you feel appropriate. They may be characteristic of your area only, or generally applicable. Your insights are unique. Confidentiality will be respected, if desired. Please take advantage of this invitation and opportunity.

SYSTEM SCIENCES, INC.
Box 2345
Chapel Hill, N.C. 27514

Program Identification Number ______

PROGRAM ADMINISTRATOR QUESTIONNAIRE

NEEDS ASSESSMENT STUDY OF VOCATIONAL EDUCATION PROGRAMS FOR DISADVANTAGED STUDENTS

(Messrs. James Hagan , Eric Rice -
AC 919-929-7116 for questions, clarification, etc.)

A IDENTIFYING INFORMATION

1. What is the identifying name which distinguishes the effort (or program) designed to meet the needs of vocational education disadvantaged students?

______

2. What School District(s) are served by this effort?

Name: ______
Street Address: ______
City: ______ County: ______
State: ______ Zip: ______
Congressional District: ______

3. Program Director or Contact Person

Name and Title: ______
______
Business Address: ______
City: ______ State: ______ Zip: ______
Phone: ______

B DEFINITION AND CLASSIFICATION OF SCHOOL YEAR 1974-75 VOC-ED DISADVANTAGED STUDENTS

1. What definition is used by your program or system to identify/classify voc-ed students as disadvantaged?

______
______
______
______

2. Using whatever categories you identified in the above definition of voc-ed disadvantaged students, please indicate the total number of students by category served in this program. Count each student only once; multi-disadvantaged students should be indicated by primary type of disadvantagement.

Category	Number	Category	Number

3. Using the information you presented in questions 1 & 2, please try to translate those categories and figures into the categories suggested by the Office of Education's *Guidelines for Identifying, Classifying, and Serving the Disadvantaged and Handicapped Under Vocational Education Amendments of 1968*. Count each student only once, by primary type of disadvantagement.

Primary Effect/Cause	Persons Qualifying
a. Academically Disadvantaged	
Language (Speaking/Comprehension)	
Deficiency	
English is Primary Language	( )
English is Secondary Language	( )
Reading and/or Writing Deficiency	
English is Primary Language	( )
English is Secondary Language	( )
Computational Deficiency	
General Educational Deficiency	
b. Socioeconomic or other non-Academic Effect	
Hostile, defiant attitude to others	( )
Passive, apathetic personal attitudes	( )
c. Economically disadvantaged (lack of transportation, is isolated, or needs some form of economic assistance)	
d. Other Remedial Effects (Specify)	
Total	

C ENROLLMENT, PLACEMENT AND FOLLOW-UP DATA

	School Year 1973-1974	School Year 1974-1975 [5]
1. Enrollment		
Voc-Ed Total		
Voc-Ed Disadvantaged		
2. Program Completions [1]		
Eligible to Complete		
Voc-Ed Regular		
Voc-Ed Disadvantaged		
3. Dropouts		
Voc-Ed Regular		
Voc-Ed Disadvantaged		
4. Reclassified [2]		
Voc-Ed Disadvantaged to Regular		
5. Placement [3]		
Voc-Ed Regular		
Voc-Ed Disadvantaged		
6. Follow-Up [4]		
Voc-Ed Regular		
Voc-Ed Disadvantaged		

7. If your program has conducted follow-up studies, please attach copies of the study reports or other descriptive information.

______

D PROGRAM PERSONNEL WITH RESPONSIBILITY FOR VOC-ED DISADVANTAGED STUDENTS

Please list all present staff positions by title, number of people occupying that position, annual term of employment, and brief description of responsibilities. Use additional sheet, if necessary.

Position/Title	Number	Term (Months)	Voc-Ed Disadvantaged Responsibilities Only; Include Estimate of Total Time Expended
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

---

[1] Includes those students who left prior to regular completion time with marketable skills. Please include the number of students enrolled, eligible to complete the program during the School Year.

[2] Number of voc-ed disadvantaged students who were classified as regular voc-ed students by the end of the academic year.

[3] Include those students placed in continuing education programs or in employment.

[4] At a 6 month follow-up of program completions for each school year, how many students were either still employed or enrolled in a continuing education/training program.

[5] For the 1974-75 School Year, provide your best projections for completions, dropouts, reclassifications, placements, and follow-ups.

E SPECIAL FEATURES

1. Please describe the recruitment procedures used by your program to attract students who would be classified as voc-ed disadvantaged students. (Use additional sheets, if needed.)

2. What means of assessing the relative "within-program" progress of students, classified as voc-ed disadvantaged, is used in your program? (e.g., academic and vocational achievement tests, behavior checklists, etc.) If available, please attach copies of assessment instruments and/or findings.

3. Please describe the strategies and/or activities undertaken by your program to enlist and maintain community support.

3a. If you utilize advisory committees for this purpose, please indicate the number of advisory committees in operation and how often they meet.

3b. If your program uses or receives newspaper, television or other media coverage please indicate the amount and frequency of this coverage.

4. Does your program have reliable placement linkages with industries, businesses, institutions in your area? _____ Yes _____ No

5. If yes, please describe.

6. Does your program have training/placement arrangements with labor unions in your area?

_____ Yes _____ No

7. If yes, please describe.

F UNMET NEEDS—THE VOC-ED DISADVANTAGED

1. Please estimate the total number of voc-ed disadvantaged students in school and eligible for your program, but not presently being served. ______________

2. Please estimate the average annual cost/student for identifying, recruiting, enrolling, maintaining and successfully serving this population of students. ______________

3. Please estimate the total number of voc-ed disadvantaged students, potentially eligible for your program but who are not now in school. (e.g., expelled, voluntarily dropped out; never enrolled)

____

4. Please estimate the average annual cost/student for identifying, recruiting, enrolling, maintaining, and successfully serving this population of students. ______________

5. Please describe the thinking process you have just used to generate the above answers (e.g., Was the answer data based, and if so, what data? Was the answer an estimate, and if so, on what did you base the estimate? How did you think through these questions?)

G PROFESSIONAL TRAINING AND EXPERIENCE

1. Check all degrees, certificates and diplomas you have obtained.

_____a. High school
_____b. Associate of Arts
_____c. Baccalaureate
_____d. Trades degree
_____e. Masters
_____f. Administrative/Supervision Certificate
_____g. Doctorate
_____h. Other ______________

2. Prior to School Year 1974-75, how many years experience have you had in the administration of vocational education programs? ______________years

3. Prior to School Year 1974-75, how many years experience have you had as a teacher? ______________years

4. How many of these teaching years do you estimate were primarily with voc-ed disadvantaged students? ______________years

5. What work, training, education, or other experience (formal and informal) have you had that would prepare you for administering a program designed to serve voc-ed disadvantaged students?

6. What specific kinds of in-service training (or other assistance) would be of greatest benefit to you in your role as administrator of a voc-ed program serving voc-ed disadvantaged students?

H SEX, RACE, AND ETHNICITY OF CURRENT VOC-ED DISADVANTAGED STUDENT POPULATION

4. Sex breakdown of students classified as voc-ed disadvantaged students.

_____male _____female

5. Ethnic and racial breakdown of voc-ed disadvantaged students according to the following categories.

_____a. Black or Negro
_____b. Spanish American
    _____(1) Puerto Rican (N.Y., N.J., Pa. States Only)
    _____(2) Spanish language surname (Az., Ca., Tx., N.M., Co., Only)
    _____(3) Other (Specify)
_____c. Indian (American)
_____d. Asian (Japanese, Chinese, Filipino, Hawaiian, Korean, Other)
_____e. White
_____f. Other (Specify)

J COMPONENT COST INFORMATION

1. Please estimate the total cost of your voc-ed program for regular voc-ed students for School Year 1973-74 ______________, for School Year 1974-75 ______________.

2. Please estimate the average cost per "regular" voc-ed student in your voc-ed program for School Year 1973-74 ______________, for School Year 1974-75 ______________.

3. Please estimate the total cost of your voc-ed program for disadvantaged students for School Year 1973-74 ______________, for School Year 1974-75 ______________.

4. Please estimate the average cost per voc-ed disadvantaged student in your voc-ed program for School Year 1973-74 ______________, for School Year 1974-75 ______________.

5. Below are listed a number of program components of successful programs for voc-ed disadvantaged students. Please answer the following questions about these components in the appropriate column.

A. In Column A, please rank-order in terms of importance, those components which are now being used in your 1974-75 voc-ed disadvantaged program (from #1 being highest to #8 being lowest).

B. In Column B, please rank-order all the components listed in terms of your perception of the "ideal" or most effective voc-ed disadvantaged program possible (from #1 being highest to #8 being lowest).

C. In Column C, please estimate the total cost of each component utilized in your voc-ed program for voc-ed disadvantaged students.

	COMPONENTS	PRESENT RANK-ORDER A	IDEAL RANK-ORDER B	COMPONENT COST ESTIMATE C
I.	Support Services (e.g., Guidance Counseling, Tutoring Services			
II.	Instructional Materials, Supplies, Related Services, and Equipment (e.g., Bilingual texts, Raw Materials)			
III.	Instructional Personnel (e.g., Remedial Specialists, Teacher Aides)			
IV.	Instructional Related Needs (e.g., Release Time, Petty Cash Fund)			
V.	Staff Development (e.g., In-Service Training, Program Visitation)			
VI.	Community Public Relations (e.g., Advisory Committees, Advertising)			
VII.	Administration and Supervision (e.g., Program Planning; Staff Supervision			
VIII.	Facilities (e.g., Classroom Space, Model Environment)			

K ELEMENT COST INFORMATION AND ESTIMATES OF NEEDED RESOURCES

The following pages present a series of table shells, one for each of the above voc-ed disadvantaged program components. The table shells suggest the elements of these program components and will permit analysis of the importance of various elements.

Note that the tables are concerned with staff hours and costs for voc-ed disadvantaged students only.

Cost totals for each grouping of elements should equal, or approximately equal, the Component Cost Estimates provided in Section J, Column C. The total cost for all elements in all of the component groups should equal, or approximately equal, your estimate of the total cost of your voc-ed program for disadvantaged students for School Year 1973-74 and 1974-75, provided in Section J, Question #3.

Instructions for Column A: Importance Rating

In Column A, please rate each of the elements listed (1, 2, 3, 4, or 5) according to their importance to a successful voc-ed program for disadvantaged students, as follows:

1	2	3	4	5
most important; absolutely essential to program's success	very important; increases program's success very much	important; increases comprehensiveness of program, but not essential	less important; useful in some ways but not necessary	least important; sometimes useful, but could easily do without

Please list any additional elements you are now using or which you feel would be useful to your program in the spaces marked "other," and rate them according to importance.

Instructions for Columns B and C: Resources for School Year 1973-74

In Columns B and C, please indicate for each element used in your program during School Year 1973-74, the total staff hours allotted for the element, and/or the total cost of the element. In providing cost information for personnel, be sure to include fringe and related benefits in calculating the costs. In providing cost information for facilities and major equipment, be sure to include depreciation, insurance, and other related costs in your calculations. We would like for you to provide actual staff hours and actual cost data where requested. However, if actual figures cannot be calculated, please provide your best estimate of staff hours and cost. When this is done, that is, an estimate rather than actual staff hours and/or cost is provided, please indicate this by writing "E" after the figures. For example, if Guidance and Counseling Services is estimated to have cost $15,000 for School Year 1973-74, then $15,000 E should be the entry in Column C.

Instructions for Columns D and E: Resources for School Year 1974-75

In Columns D and E, please indicate, for each element used in your program during School Year 1974-75, the total staff hours allotted for the element and/or the total cost of the element. Please be sure that personnel costs include fringe benefits, and facilities and major equipment costs include depreciation and insurance. Please indicate with the letter "E" those figures provided which are estimates rather than actual data.

Instructions for Column F: Increased Effectiveness - 25%

In Column F, please indicate the additional resources needed for each element that you estimate would be required to increase the effectiveness of your program by 25%. For purposes of this survey questionnaire, increased effectiveness means increasing the total number of successful graduates. Please do this for each program element that you feel is needed, whether you are presently using it in your program or not. For each program element, calculate the additional dollar cost and enter this under Column F.

Instructions for Column G: Increased Effectiveness - 75%

In Column G, please indicate the additional resources needed for each element that you estimate would be needed to increase the effectiveness of your program by 75%. For purposes of this survey questionnaire, increased effectiveness means increasing the total number of successful graduates. Please do this for each program element that you feel is needed, whether you are presently using it in your program or not. For each program element, calculate the additional dollar cost and enter this under Column G.

Please note: It is very important to the achievement of the objectives of this research project that you be as accurate as possible in providing the information requested, and that your estimates for additional resources needed to increase program effectiveness reflect your best professional judgment.

D-9

COMPONENT I: PROGRAM SUPPORT SERVICES

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Guidance and Counseling							
2. Parental/Family Counseling							
3. Psychological Testing and Counseling (e.g., personal)							
4. Diagnostic and Evaluation Services (e.g., academic/work adjustment)							
5. Home/School Coordinator							
6. Work-Experience Coordinator							
7. Job Placement Coordinator							
8. Tutoring Services							
9. Consultant Services							
10. Administrative-Clerical Assistance							
11. Health Services (e.g., nursing, dental care)							
12. Transportation Services for Students							
13. Student Financial Aid							
14. Food Services							
15. Staff Travel							
16. Readers							
17. Interpreters							
18. Other ________							

COMPONENT II: INSTRUCTIONAL MATERIALS, SUPPLIES, EQUIPMENT AND RELATED SERVICES

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Individualized Instructional Modules							
2. Task Analysis of Occupations							
3. Printed Materials							
4. Minority Culture Oriented Materials							
5. Bilingual Texts							
6. Teaching Games/Working Models							
7. Remedial Materials							
8. Audio-Visual Materials (e.g., film strips)							
9. Electronic Aids (T.V., overhead projectors, computers)							
10. Raw Materials							
11. Routine Classroom Materials (e.g., paper, chalk, etc.)							
12. Tools and Equipment							
13. Field Trips							
14. Contractual Services							
15. Maintenance and Repair of Equipment							
16. Furniture and Furnishing							
17. Other ________							

COMPONENT III: INSTRUCTIONAL PERSONNEL

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Regular Voc-Ed Instructional Staff							
2. Regular Instructional Staff (general academic)							
3. Remedial Reading Specialist							
4. Remedial Math Specialist							
5. Bilingual Specialist (e.g., reader, interpreter)							
6. Media Specialist							
7. Teacher Aides							
8. Curriculum Specialist							
9. Other ______________							

COMPONENT IV: INSTRUCTIONAL RELATED NEEDS

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Additional Period of Employment for Instructional Staff							
2. Release Time for Student Conferences							
3. Petty Cash Fund							
4. Substitute Teacher Pay							
5. Monetary Reward System for Students							
6. Identification of Students							
7. Teacher Clerical Support							
8. Release Time for Planning							
9. Other ______________							

COMPONENT V: STAFF DEVELOPMENT

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Teacher In-Service Training Programs (e.g., workshops, conferences)							
2. Administrator In-Service Training Program							
3. Needs Assessment of Staff (identification of staff needs)							
4. Visitation of other Programs							
5. Attendance at Professional Meetings (e.g., travel, salaries)							
6. Other ______________							

COMPONENT VI: COMMUNITY PUBLIC RELATIONS

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Community/Industry Advisory Committee							
2. Labor Union Liaison							
3. Community-Industry Referral Service							
4. Community-Industry Visitation Program							
5. Advertising Budget							
6. Information Dissemination Office							
7. Interagency Coordination (e.g. Voc-Rehab., Mental Health, Courts, Employment Office)							
8. Other ______________							

COMPONENT VII: ADMINISTRATION & SUPERVISION

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Program Planning & Development							
2. Program Evaluation & Research							
3. Staff Supervision							
4. Advisory Committees							
5. Other Community Public Relations & Promotional Activities							
6. Accessing Community Resources							
7. Follow-Up Surveys/Studies							
8. Community-Employer Surveys							
9. Statistical Services & Report Preparation							
10. Program Administration							
11. Other ______________							

COMPONENT VIII: FACILITIES

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Classroom Space							
2. Shop/Lab Space							
3. Office Space (instructional/Administrative)							
4. Model Environments (e.g., mobile units, greenhouse)							
5. Facilities Maintenance Costs							
6. Curriculum Laboratory							
7. Learning Laboratory							
8. Other ______________							

APPENDIX E

TEACHER QUESTIONNAIRE

SYSTEM SCIENCES, INC.
Box 2345
Chapel Hill, North Carolina 27514

NEEDS ASSESSMENT STUDY OF VOCATIONAL EDUCATION PROGRAMS FOR DISADVANTAGED STUDENTS

Program ID # ____________

TEACHER QUESTIONNAIRE

A. DATA ON VOC-ED DISADVANTAGED STUDENTS

1. Please give your working definition of a voc-ed disadvantaged student from the vocational education perspective.

____

____

____

____

2. How many students are presently on your class roles? ____________

3. How many students on your class role are classified as voc-ed disadvantaged? __________

(a) The number of males is ______. Number of females is ______.

(b) Ethnic and racial background of students according to the 1970 Census categories. Provide the best estimate.

_____1. Black or Negro
_____2. Spanish American
  _____(a) Puerto Rican (N.Y., N.J., Pa., only)
  _____(b) Spanish language surname (Ariz., Ca., Tx., N.M., Co. only)
  _____(c) Other
_____3. Indian (American)
_____4. Asian (Japanese, Chinese, Filipino, Hawiian, Korean)
_____5. White
_____6. Other (Specify)

4. How would you describe your teaching situation?

_____a. self-contained
_____b. resource center
_____c. itinerant teaching
_____d. regular voc-ed classroom
_____e. other, please specify ____________________

DHEW Publication No. (OE) 73-11700, Guidelines for Identifying, Classifying, and Serving the Disadvantaged and Handicapped Under the Vocational Education Amendments of 1968 provides the formal federal definition for voc-ed disadvantaged students as follows:

(i) "Disadvantaged persons" means persons who have academic, socioeconomic, cultural, or other handicaps that prevent them from succeeding in vocational education or consumer and homemaking programs designed for persons without such handicaps, and who for that reason require specially designed educational programs or related services. The term includes persons whose needs for such programs or services result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large, but does not include physically or mentally handicapped persons (as defined in paragraph (o) of this section) unless such persons also suffer from the handicaps described in this paragraph.

5. Using the federal definition given above, please classify the total number of voc-ed disadvantaged students you teach or have responsibility for by primary category of disadvantagement.

Primary Effect/Count	Persons Qualifying
a. Academically Disadvantaged	
Language (Speaking/Comprehension)	
Deficiency	
English is Primary Language	( )
English is Secondary Language	( )
Reading and/or Writing Deficiency	
English is Primary Language	( )
English is Secondary Language	( )
Computational Deficiency	
General Educational Deficiency	
b. Socioeconomic or other non-Academic Effect	
Hostile, defiant attitude to others	( )
Passive, apathetic personal attitudes	( )
c. Economically disadvantaged (lack of transportation, is isolated, or needs some form of economic assistance)	
d. Other Remedial Effects (Specify)	
Total	

6. What is your title or position in the program? ____________

7. Please briefly describe your responsibilities.

B. TEACHER INFORMATION

1. Sex

____male ____female

2. Ethnic or Racial Breakdown (Check 1970 Census Category as appropriate.)

____a. Black
____b. Spanish American
  ____(1) Puerto Rican (N.Y., N.J., Pa., states only)
  ____(2) Spanish language - surname (Ariz., Ca., Co., Tx., N.M. states only)
____c. Indian (American)
____d. Asian (Japanese, Chinese, Filipino, Hawaiian, Korean, Other)
____e. White
____f. Other (specify)

3. Highest degree obtained

____a. High School	____e. Masters
____b. Associate of Arts	____f. Prinicipal or Supervisor's certificate
____c. Baccalaureate	
____d. Trades Degree	____g. Doctorate

4. Teaching major or specialization ____________

5. Prior to School Year 1975, how many years have you been teaching in vocational education? ______years

6. What specialized work/education/training or other experience (formal or informal) have you had to prepare you for your present assignment with voc-ed disadvantaged students?

E-2

7. How adequate would you say your preparation has been to serve voc-ed disadvantaged students?

___a. excellent ___b. good ___c. fair ___d. inadequate

8. What are the two outstanding strengths of your preparation for dealing with voc-ed disadvantaged students?

9. What are the most serious weaknesses of your preparation for dealing with voc-ed disadvantaged students?

C. UNMET NEEDS

Please identify, list and describe those needs and/or resources which you feel would be most helpful in increasing your personal capability for more effectively meeting the responsibilities of your role.

1. ____________
2. ____________
3. ____________
4. ____________
5. ____________
6. ____________
7. ____________
8. ____________
9. ____________
10. ____________

D. PROGRAM SUMMARY 1973-74

The following information about your program, ____________________ ____________________________, was supplied by your program director. Please use this information as a basis for making your estimates of programmatic needs on the following pages.

During the 1973-74 school year there were __________ vocational students in your overall program, __________ of which were classified as voc-ed disadvantaged students. The total cost of your regular voc-ed program was __________ with __________ being the average cost per "regular" voc-ed student. The total cost of your voc-ed disadvantaged program was __________ with __________ being the average additional cost for each voc-ed disadvantaged student making the total cost per disadvantaged student __________.

Of the students enrolled during 1973-74, __________ regular and __________ disadvantaged students were eligible to complete the program. The number of students who completed the regular voc-ed program during 1973-74 was __________ while the number who dropped out was __________. The number of voc-ed disadvantaged students who completed the program in 1973-74 was __________ while the number who dropped out was __________.

The total number of "regular" students placed upon completion of your program in 1973-74 was __________ while the total number of voc-ed disadvantaged students placed during the same year was ________. Additionally, __________ voc-ed disadvantaged students were reclassified as regular students during/after the 1973-74 school year. Furthermore, a follow-up survey at six months after program completion indicated that __________ students were still employed and/or enrolled in a continuing education program.

E. PROGRAM SUMMARY 1974-75

The following information about your program, ____________________ ____________________________, was supplied by your program director. Please use this information as a basis for making your estimates of programmatic needs on the following pages.

During the 1974-75 school year there were __________ vocational students in your overall program, __________ of which were classified as voc-ed disadvantaged students. The total cost of your regular voc-ed program was __________ with __________ being the average cost per "regular" voc-ed student. The total cost of your voc-ed disadvantaged program was __________ with __________ being the average additional cost for each voc-ed disadvantaged student making the total cost per disadvantaged student __________.

Of the students enrolled during 1974-75, __________ regular and __________ disadvantaged students were eligible to complete the program. The number of students who completed the regular voc-ed program during 1974-75 was __________ while the number who dropped out was __________. The number of voc-ed disadvantaged students who completed the program in 1974-75 was __________ while the number who dropped out was __________.

The total number of "regular" students placed upon completion of your program in 1974-75 was __________ while the total number of voc-ed disadvantaged students placed during the same year was ________. Additionally, __________ voc-ed disadvantaged students were reclassified as regular students during/after the 1974-75 school year. Furthermore, a follow-up survey at six months after program completion indicated that __________ students were still employed and/or enrolled in a continuing education program.

F

E-4

RATINGS OF PROGRAM ELEMENTS AND ESTIMATES OF NEEDED RESOURCES

The following sheet (2 pages) presents a series of table shells of program elements which are grouped into eight vocational education disadvantaged program components. The program components represent different functional areas within a vocational education program and were adapted from the Standard Terminology for Curriculum and Instruction in Local and State School Systems as modified on the basis of input from various vocational education program administrators and their staffs. The table shells suggest the elements of these program components and will permit analysis of the importance of the various elements.

In responding to this section of the questionnaire, you will be concerned only with providing information for Column A, Importance Ratings, Column F, 25% Increased Effectiveness, and Column G, 75% Increased Effectiveness.

Instructions for Column A: Importance Rating

In Column A, please rate each of the elements listed (1, 2, 3, 4, or 5) according to their importance to a successful voc-ed program for disadvantaged students, as follows:

1	2	3	4	5
most important; absolutely essential to program's success	very important; increases program's success very much	important; increases comprehen- siveness of program, but not essential	less important; useful in some ways but not necessary	least important; sometimes useful, but could easily do without

Please list any additional elements you are now using or which you feel would be useful in your program in the spaces marked "other," and rate them according to importance.

Information Provided in Columns B and C: Resources for School Year 1973-74 and Information Provided in Columns D and E: Resources for School Year 1974-75

In Columns B and C, for each element used in your program during School Year 1973-74, the total staff hours alloted for the element and/or the total cost of the element has been provided. This information [illegible] resources utilized and cost information has been provided by your program [illegible] istration. In some cases, actual figures could not be calculated and a best estimate of staff hours and/or cost has been provided.

In Columns D and E, similar information is provided for your program during School Year 1974-75.

This information is provided to you so that you might review it prior to making estimates of additional resources that would be needed to increase your program's effectiveness by 25% and 75%. We ask that you take a few minutes to review this information to see how resources have been allocated within your program over the past two school years.

Instructions for Column F: Increased Effectiveness- 25%

In Column F, please indicate the additional resources needed for each element that you estimate would be required to increase the effectiveness of your program by 25%. For purposes of this survey questionnaire, increased effectiveness means increasing the total number of successful graduates. Please do this for each program element that you have rated as either 1 or 2 in the Importance Ratings requested in Column A. It makes no difference whether you are presently using it in your program or not. If you rated the element's importance as 1 or 2, then please indicate the additional resources that you estimate would be needed to increase the effectiveness of your program by 25%. For each program element, calculate either the additional staff hours/positions, or additional dollar cost and enter this figure in Column F. Please note that for each element, we have specified how additional resources are to be coded—either as staff hours and/or position, or dollar cost.

Instructions for Column G: Increased Effectiveness- 75%

In Column G, please indicate the additional resources needed for each element that you estimate would be required to increase the effectiveness of your program by 75%. The directions for providing the information in this column are the same as those used in Column F.

Please Note: To facilitate your estimating additional resources in terms of additional staff, the following rule of thumb should be [illegible] in mind. One fulltime position equals 2080 staff hours. If [illegible] would like, you may estimate additional staff needs by fraction positions. For example, if you wanted to increase guidance and counseling services by 1/2 position, you may indicate this by eith[illegible] writing 1/2 P or 1040 staff hours.

COMPONENT I: PROGRAM SUPPORT SERVICES

	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
ELEMENT	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Guidance and Counseling							
2. Parents/Family Counseling							
3. Psychological Testing and Counseling (e.g., personal)							
4. Diagnostic and Evaluative Services (e.g., academic/work adjustment)							
5. Home/School Coordinator							
6. Work-Experience Coordinator							
7. Job Placement Coordinator							
8. Tutoring Services							
9. Consultant Services							
10. Administration-Clerical Assistance							
11. Health Services (e.g., nursing, dental care)							
12. Transportation Services for Students							
13. Student Financial Aid							
14. Food Services							
15. Staff Travel							
16. Rentals							
17. [illegible]							
18. Other ______							

COMPONENT II: INSTRUCTIONAL MATERIALS, SUPPLIES, EQUIPMENT AND RELATED SERVICES

	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
ELEMENT	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Individualized Instructional Modules							
2. Task Analysis of Occupations							
3. Printed Materials							
4. Minority Culture Oriented Materials							
5. Bilingual Texts							
6. Teaching Games/Working Models							
7. Remedial Materials							
8. Audio-Visual Materials (e.g., film strips)							
9. Electronic Aids (T.V., overhead projectors, computers)							
10. Raw Materials							
11. Routine Classroom Materials (e.g., paper, chalk, etc.)							
12. Tools and Equipment							
13. Field Trips							
14. Contractual Services							
15. Maintenance and Repair of Equipment							
16. Furniture and Furnishing							
17. Other ______							

COMPONENT III: INSTRUCTIONAL PROGRAMS

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Regular Voc-Ed Instructional Staff							
2. Regular Instructional Staff (general academic)							
3. Remedial Reading Specialist							
4. Remedial Math Specialist							
5. Bilingual Specialist (e.g., reader, interpreter)							
6. Media Specialist							
7. Teacher Aides							
8. Curriculum Specialist							
9. Other ______							

COMPONENT IV: INSTRUCTIONAL RELATED NEEDS

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Additional Period of Employment for Instructional Staff							
2. Release Time for Student Conferences							
3. Petty Cash Fund							
4. Substitute Teacher Pay							
5. Monetary Reward System for Students							
6. Identification of Students							
7. Teacher Clerical Support							
8. Release Time for Planning							
9. Other ______							

COMPONENT V: STAFF DEVELOPMENT

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Teacher In-Service Training Programs (e.g., workshops, conferences)							
2. Administrator In-Service Training Program							
3. Needs Assessment of Staff (identification of staff needs)							
4. Visitation of other Programs							
5. Attendance at Professional Meetings (e.g., travel, salaries)							
6. Other ______							

COMPONENT VI: COMMUNITY PUBLIC RELATIONS

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Community/Industry Advisory Committee							
2. Labor Union Liaison							
3. Community-Industry Referral Service							
4. Community-Industry Visitation Program							
5. Advertising Budget							
6. Information Dissemination Office							
7. Interagency Coordination (e.g., Voc-Rehab., Mental Health, courts, Employment Office)							
8. Other ______							

COMPONENT VII: ADMINISTRATION & SUPERVISION

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Program Planning & Development							
2. Program Evaluation & Research							
3. Staff Supervision							
4. Advisory Committees							
5. Other Community Public Relations & Promotional Activities							
6. Accessing Community Resources							
7. Follow-Up Surveys/Studies							
8. Community-Employer Surveys							
9. Statistical Services & Report Preparation							
10. Program Administration							
11. Other ______							

COMPONENT VIII: FACILITIES

ELEMENT	Importance Rating	Resources for School Year 1973-74		Resources for School Year 1974-75		Increased Effectiveness	
	1,2,3,4, or 5	Total Staff Hours	Total Cost	Total Staff Hours	Total Cost	25%	75%
	A	B	C	D	E	F	G
1. Classroom Space							
2. Shop/Lab Space							
3. Office Space (instructional/Administrative)							
4. Model Environments (e.g., mobile units, greenhouse)							
5. Facilities Maintenance Costs							
6. Curriculum Laboratory							
7. Learning Laboratory							
8. Other ______							

APPENDIX F

FIELD TEST OF PROGRAM ADMINISTRATOR QUESTIONNAIRE

The field test of the Assessment of Need instruments was conducted during the eighth and ninth project months and simulated the actual survey procedure. The Field Test Draft of the Program Administrator Questionnaire (PAQ) was mailed to eight local program administrators in North Carolina whose programs had received set-aside Vocational Education Disadvantaged funds. Each administrator was requested to complete the Field Test Draft of the PAQ and to return it within three weeks from the date of receipt. Additionally, each participant was provided with an evaluation form to collect his comments on the Program Administrator Questionnaire in order to revise the instrument before the national survey.

Based on the results of the evaluation of the Field Test Draft of the PAQ several significant revisions were made. For example, follow-up phone calls were included in the national assessment methodology to ensure that each administrator had a clear understanding of the research project and the data requirements pursuant to participation in the project. The Program Administrator Questionnaire package was revised such that directions were made more clear and more concise. The format of the questionnaire was altered significantly in order to group similar data so that it could be printed on the front and back of two pages rather than as a cumbersome twenty-page instrument. Additionally, the information requested was revised to reflect only two years of program operation rather than three years as was included in the field test.

For North Carolina the field test amounted to a needs assessment on the state level of several projects which utilize set-aside funds. By grouping the collected data into categories that reflect similar information, it was possible to derive an aggreate picture of the programs of the six respondents in terms of program inputs and outcomes. For example, the enrollment by primary type of disadvantagement indicated that a total of 1,119 students were listed as vocational education disadvantaged students served in the surveyed programs. Three hundred and ninety-seven of these students were classified as socio-economically disadvantaged; 187 were listed as culturally disadvantaged;

495 were listed educationally disadvantaged; and 40 were listed by classifications other than the four standard classifications of disadvantagement. Further, four of the six responding program administrators indicated a clear understanding of the cause-effect distinction mandated in the federal guideline document on classification of disadvantagement. The remaining two respondents emphasized the causal aspects of disadvantagement and ignored the effects, thus permitting one to conclude that a high degree of uniformity of understanding concerning categorization and causes of disadvantagement existed in the State of North Carolina. The aggregation of enrollment data concerning Sex, Race/Ethnicity of Disadvantaged Student Population produced few noteworthy occurrences. Here the data suggested that a majority of the students served by the North Carolina programs that were surveyed were white males, although a large number of black males were also served. In fact, the North Carolina figures reflected almost identically, the national norms in this category. However, the only additional racial ethnic breakdown to white or black which emerged from the North Carolina data were a small number of Indians which were served in a single program.

A second kind of input data gathered by the field test questionnaire was a description of the typical program administrator in these programs in terms of his professional training, experience and self-perceived needs in dealing with vocational education disadvantaged students. The results of this aggregation of data indicated that five of the six program administrators hold at least a Masters Degree; additionally, two of the six hold Trades Degrees. In terms of experience, five of the six program administrators have served as an administrator with responsibilities for a special needs population for 5 years or longer. Further, before becoming a program administrator for vocational education disadvantaged students five of the six respondents indicated a minimum of ten years of teaching experience, five of which was spent with vocational education disadvantaged students.

In terms of in-service training which would be beneficial to administrators of programs of vocational education, the respondents suggested two primary strategies that would be of greatest assistance. First, they suggested that internships in programs serving disadvantaged students would be excellent pre-service and in-service training. Second, they suggested that visitation of outstanding programs serving vocational education disadvantaged students would serve as a useful refresher course.

The enrollment information in Box C, "Enrollment, Placement, and Follow-up Data," indicated that the trend in North Carolina from 1972-1975 demonstrated an increase of enrollment of vocational education disadvantaged students. For example, the percentage of vocational education disadvantaged students of the total vocational education enrollment for the school year 1972-1973 was 2.25 percent as compared to 3.0 percent for the school year 1973-74; this amounts to an increase of almost one percent during that school year. Further, the data from the 1974-75 school year showed an average enrollment increase of vocational education disadvantaged students of 0.8 percent from the previous school year to a total percentage enrollment of 3.8 percent.

Likewise, the average number of students eligible to complete programs had increased in North Carolina over the past three years. This was true for vocational education regular students as well as vocational education disadvantaged students. In terms of the disadvantaged student population, the increase over the last three years had averaged 31 percent per program for the six programs surveyed with the present average number of vocational education disadvantaged student completions per program having been 59 students per year.

Further analysis of the program completion data indicated a high program completion rate. For the two school systems which supplied adequate information to carefully check the completion rate, the average rates over the last three years were 95 and 92 per cent respectively. Similarly all programs indicated a decrease in the average number of drop-outs for the total vocational enrollment during the last three years. While the decrease in the drop-out rate for vocational education disadvantaged students was less dramatic than the decrease in the drop-out rate for the total enrollment, the trend toward continuing enrollment was continued. Furthermore, the drop-out rate for vocational education disadvantaged students remained consistantly lower than for vocational education regular students in each of the reporting programs during the last three school years.

Information on unmet needs was also gathered during the field tests. The results of this activity indicated that an average of 170 students per program were believed to have been eligible for vocational education disadvantaged programs and were enrolled in school but were not being served. This compares with an average of 158 vocational education disadvantaged students who were estimated to be potentially eligible for the vocational education program but were not enrolled in school. Together these estimates of unmet needs suggested that for every student served in a vocational education program for disadvantaged students there were at least two students of the same age group left unserved.

Each administrator was asked to estimate the average cost per student for identifying, recruiting, enrolling, maintaining, and successfully serving vocational disadvantaged students who were in school and were eligible for the program but were not being served. The average estimated additional cost per student for this population of students was $221. The average additional cost to identify, recruit, enroll, maintain and serve each potentially eligible student who was not then enrolled in school was an additional $319.

Each responding administrator was asked to indicate the type and level of expenses associated with serving his vocational education disadvantaged population. The net result of gathering this data was a calculation of the additional costs expended per vocational education disadvantaged student for each school year. For example, for 1974-75 $152 was the average additional vocational education expenditure per vocational education disadvantaged student.

Administrators were asked to rank order by importance the eight components developed by SSI as categories of program expenditure. For North Carolina this rank order is as follows:

	Present Rank Order	Ideal Rank Order
Instructional Materials	2.0	2.2
Instructional Personnel	2.0	2.2
Support Services	3.2	2.4
Staff Development	3.6	4.2
Administration & Supervision	4.8	5.0
Instruction & Related Needs	5.0	5.2
Facilities	5.2	5.0
Community/Public Relations	6.4	6.4

Further, administrators were requested to provide priority rankings for all program elements. This data was included in the total survey data on priorities.

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